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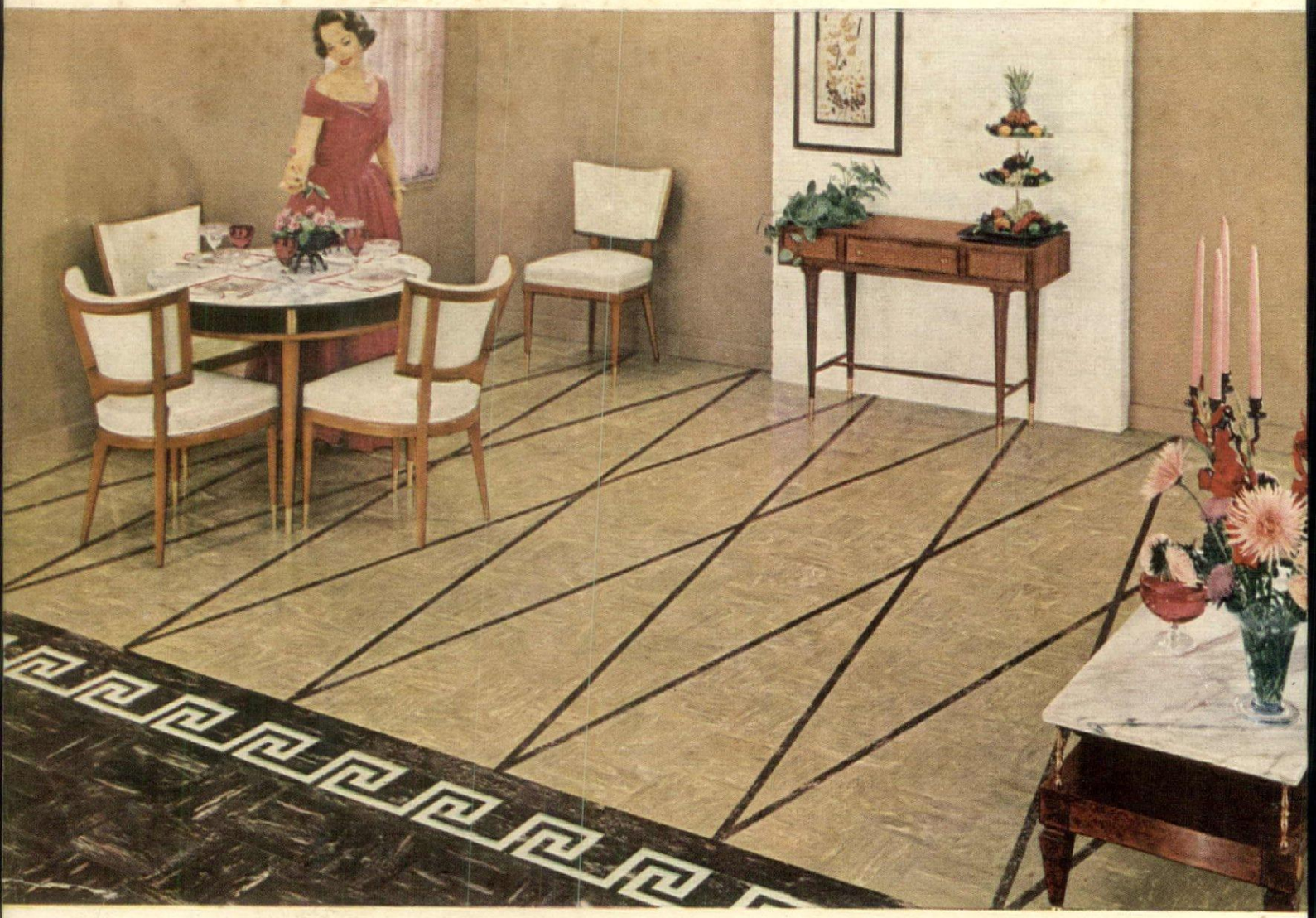
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Schools—a look backward and forward (p. 129 and below) . . . A small-town bank by Eero Saarinen (p. 158)



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OCTOBER 1955

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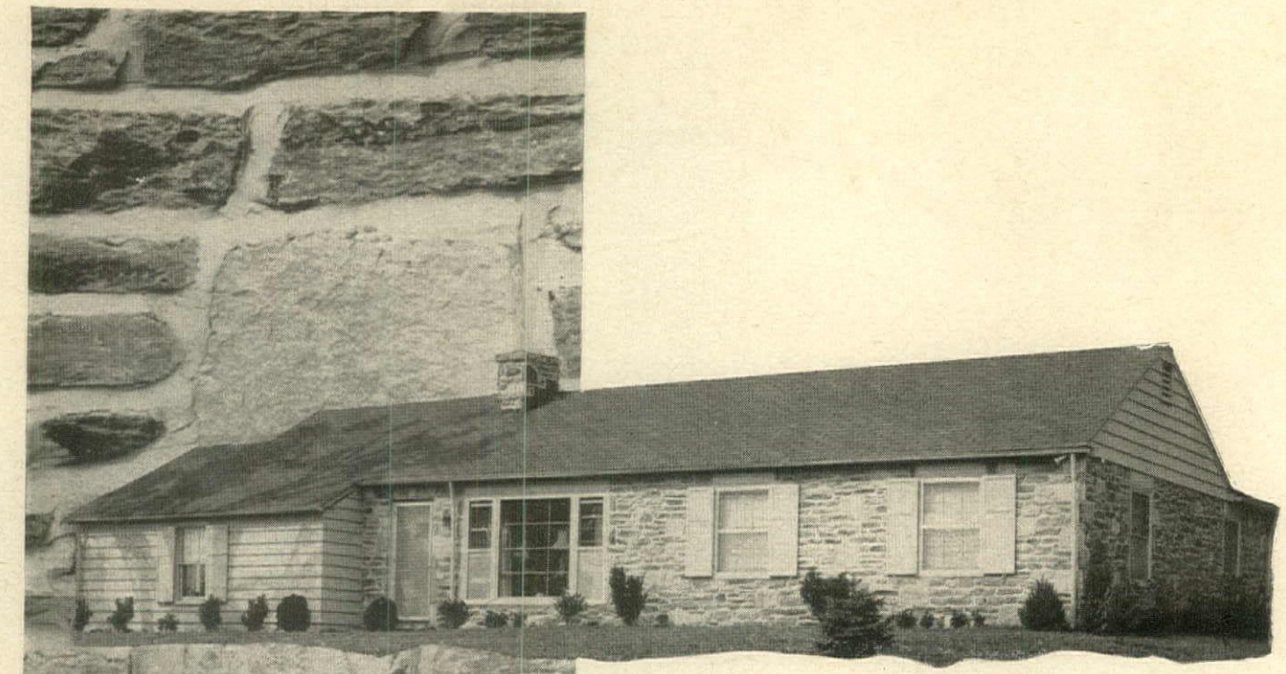
Cover: Design by Ray Komai based on Northport, N.Y. school by Architects Ketchum, Gina & Sharp

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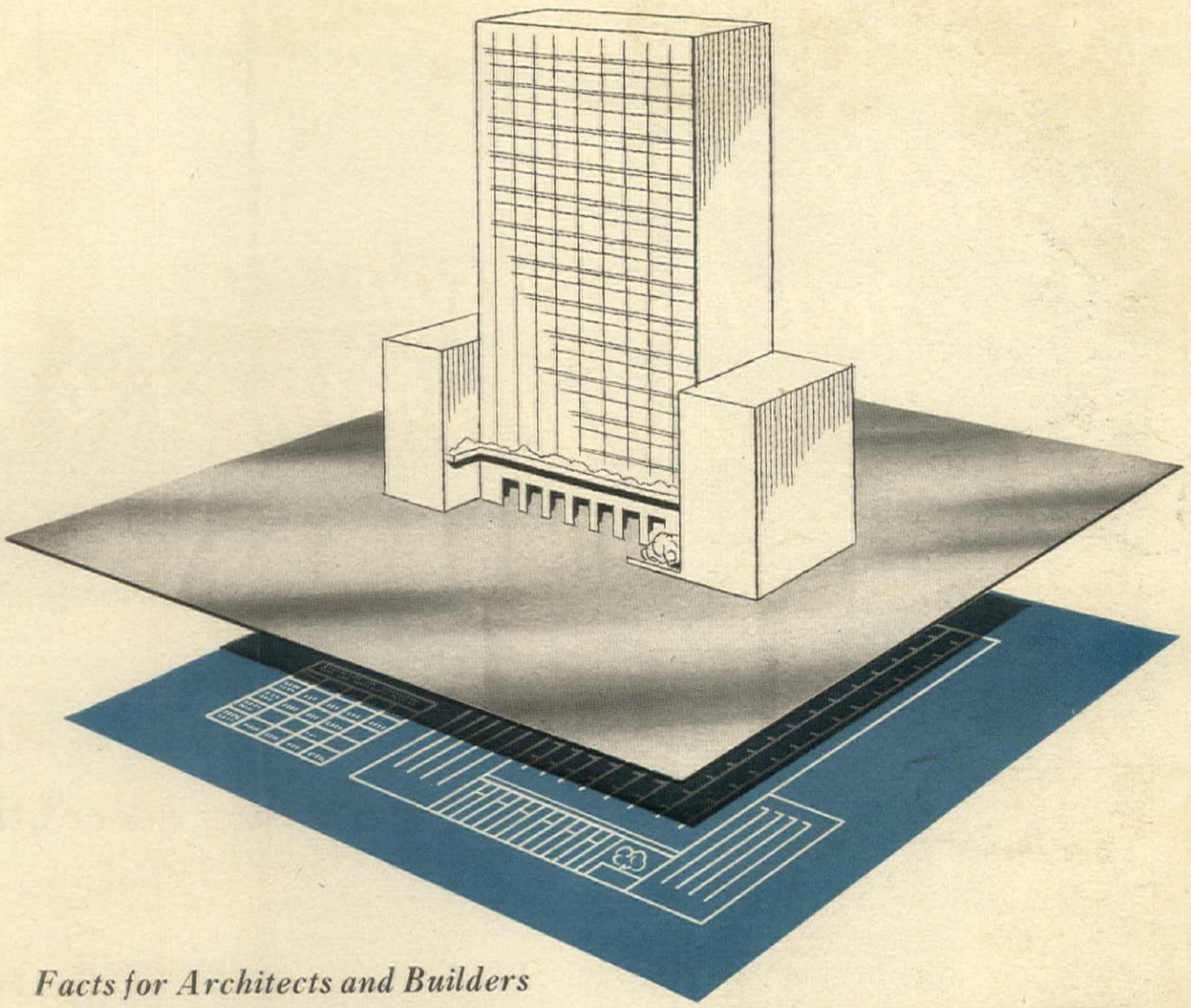
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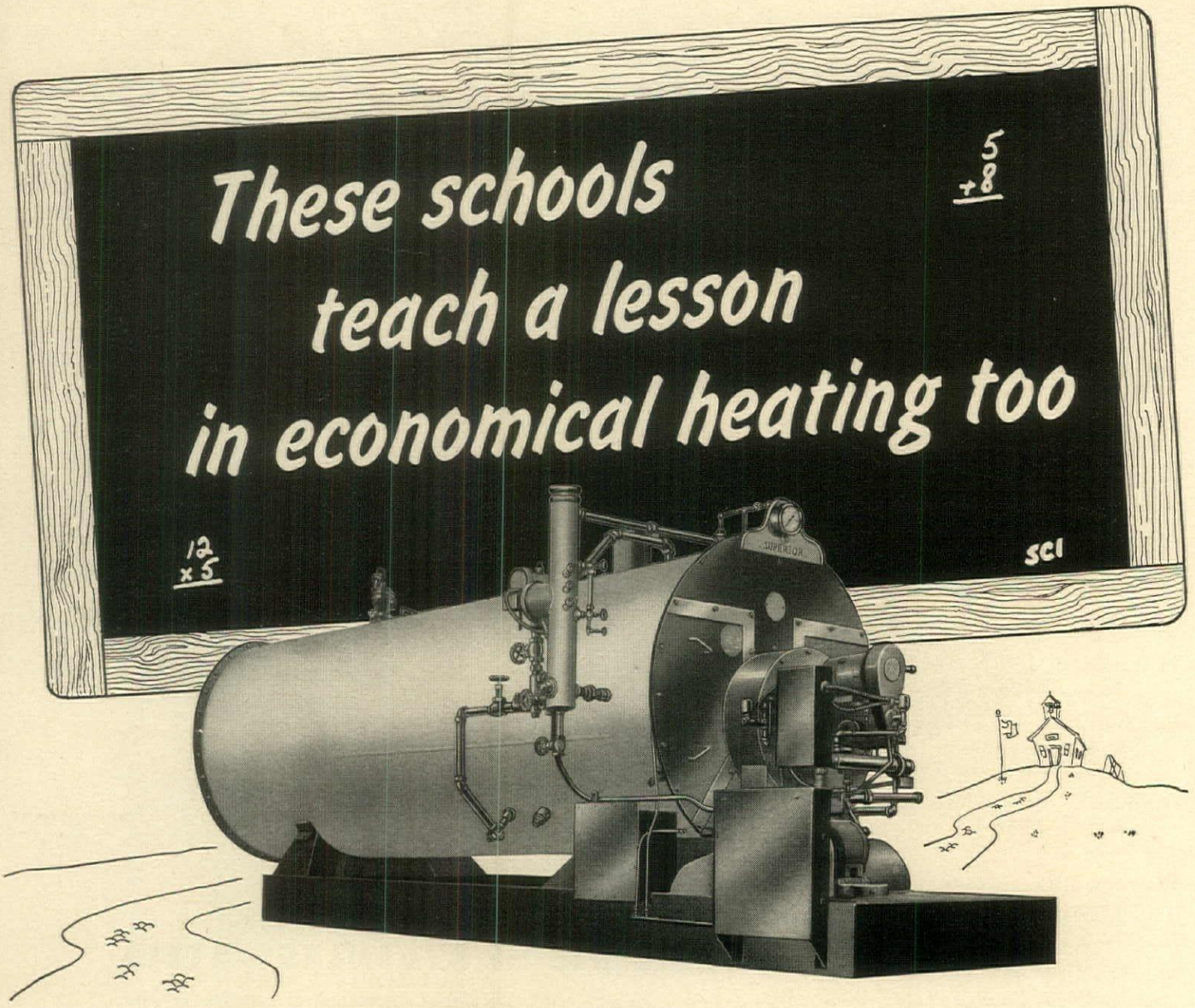
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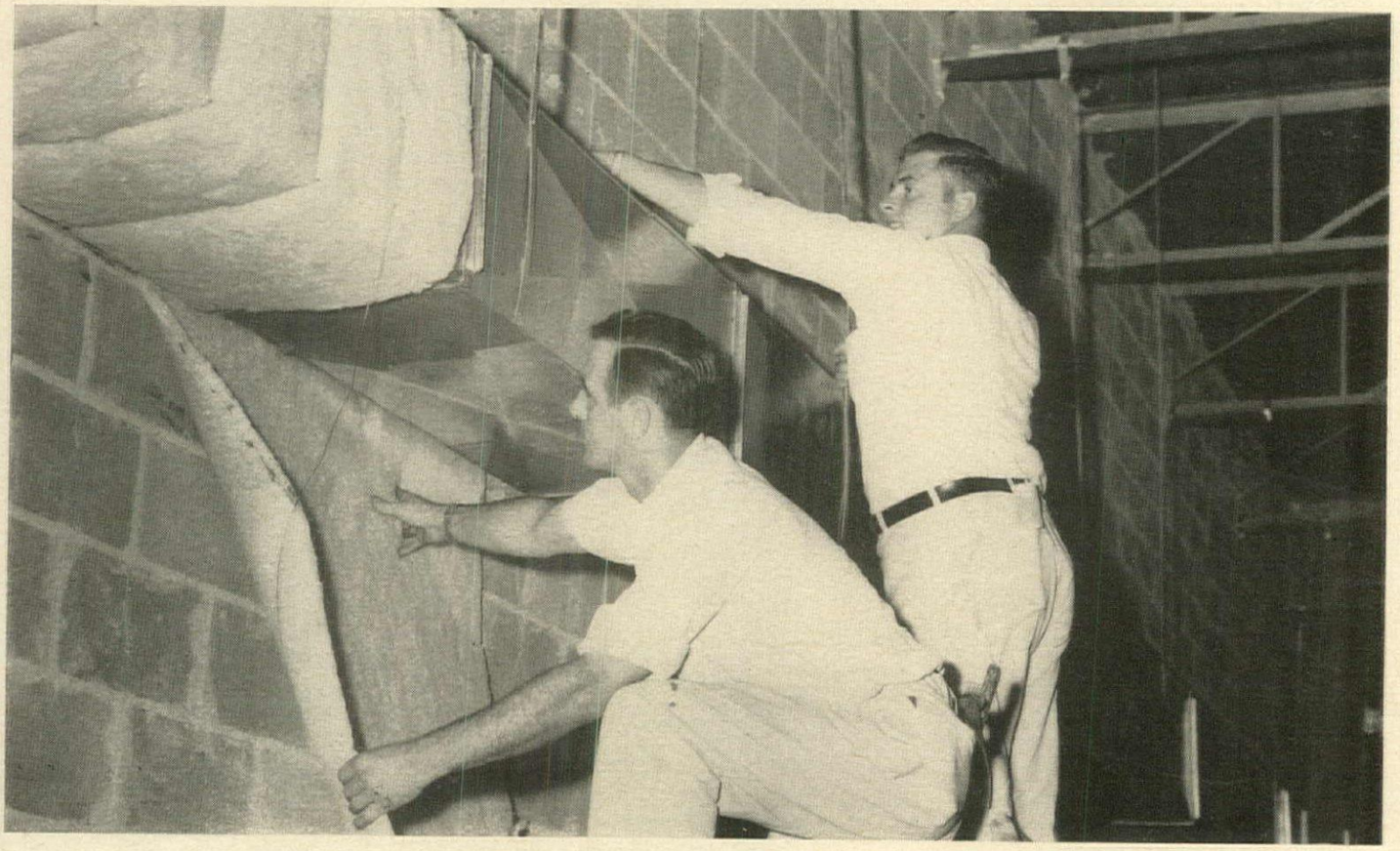
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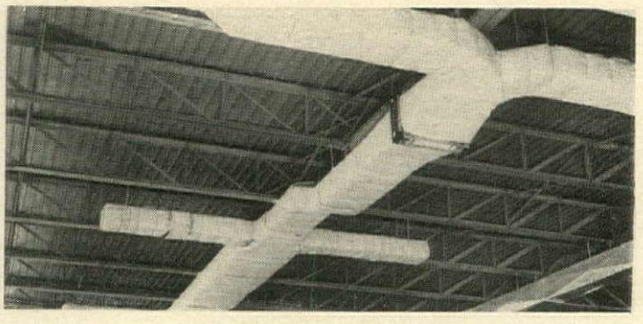


Applying L·O·F Super·Fine at the Northwood Shopping Center. The high tensile strength of the glass fiber blankets permits them to be pulled between the duct and wall without tearing.

Architect Louis A. Redstone, and Allan G. Agree, associate architect, specified ½-pound, 1-inch L·O·F Super·Fine to insulate concealed combination heating and cooling ducts at the new Northwood Shopping Center, Royal Oak, Michigan. Low thermal conductivity, and speed and ease of application were important considerations.

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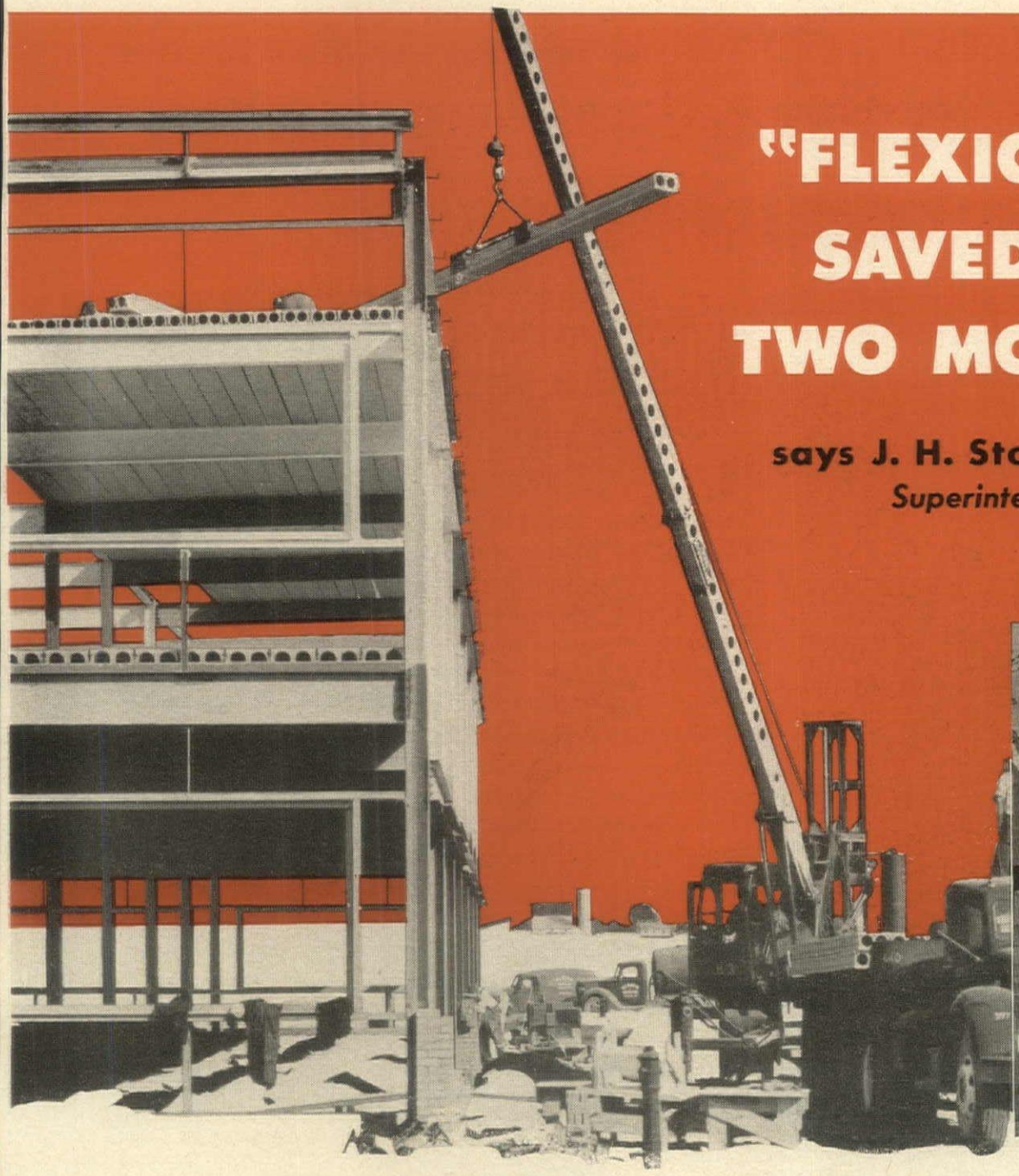
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New Plant for Rex Manufacturing Co., Division of Philco Corporation.



Flexicore mezzanine is 760′ long. 115,000 sq. ft. of slabs used.



The new 300,000 sq. ft. plant of the Rex Manufacturing Company at Connersville, Indiana has an unusual mezzanine floor of Flexicore precast concrete slabs.

"Flexicore saved us two months," reports J. H. Stonebraker, job superintendent for the A. J. Glaser Company, Inc., Muncie, Indiana, general contractors.

"We didn't have to wait for pouring and curing of the mezzanine," he says. "We went right ahead on the main floor without interference from either formwork or shores."

The Rex plant was designed by Giffels & Vallet, Inc. and L. Rosseti, Detroit. It is 760′ by 420′, with a steel frame, corrugated metal curtain walls and channel slab roof.

The mezzanine runs the 760′ length of the building on one side and varies in width from 60′ to 240′. It is used for light assembly, stockrooms, and storage. Flexicore was selected to get flexibility for future changes. The slabs clear-span 20′ bays.

The adjoining two-story office building has Flexicore slabs for second floor and roof.

Flexicore concrete slabs make hollow-core fire-resistant floors and roofs. Each slab is a *monolithically* cast unit with a clean, smooth undersurface that gives an attractive panelled ceiling without plaster. The joint between the slabs forms a grout lock that ties the slabs together in a flat, rigid unit.

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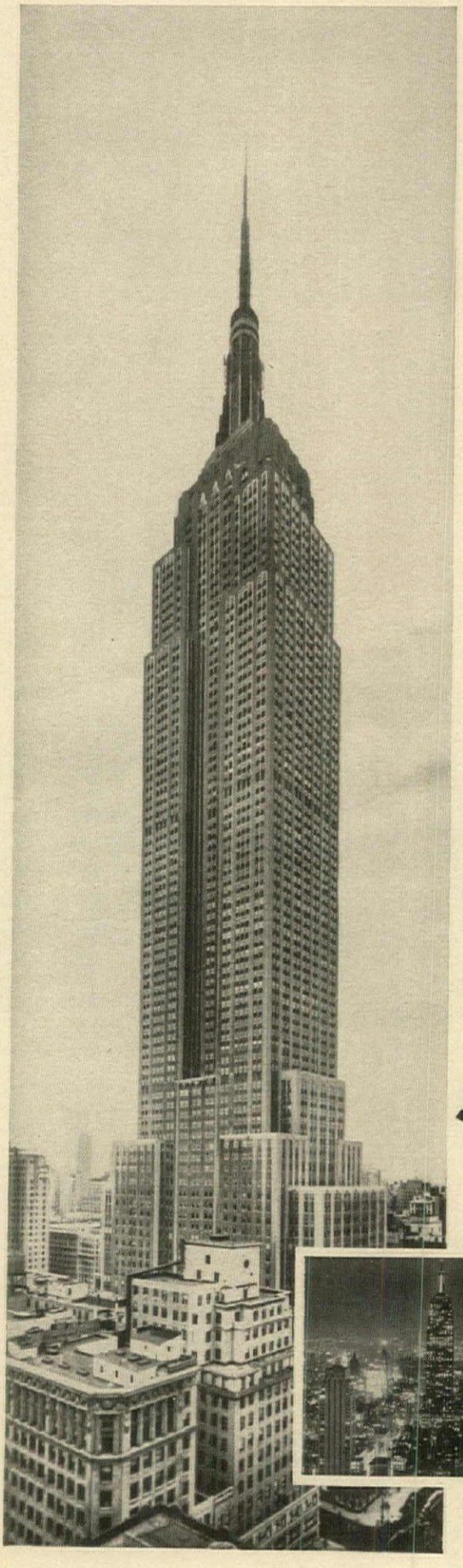
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More than 15 hundred of these flush valves were installed to serve 25 thousand tenants on 102 floors which provide 2 million square feet of rentable area. Over 15 million persons from every state in the nation and nearly all foreign countries have visited the observatories on the 86th and 102nd floors, both open every day and until midnight every night.

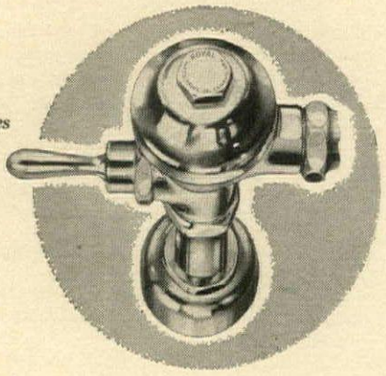
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Industrial building heads for new peaks; Governors turn salesmen to woo plants

"Private industrial building's husky resurgence, after a two-year slide, was the big news in 1955. In 1956, plant expansion will continue the new uptrend at a quickened rate [advance about 18% over this year], as industry faces up to the capital requirements of an increasing population, an increasing standard of living, and the need to offset increasing labor costs with more efficient productive processes. Private industrial building will amount to $2.6 billion next year [over $10 million every Monday-to-Friday working day]; and over the next ten years; it should steadily advance to a level about 50% higher than the $2.2 billion 1955 estimate."—Economist-Consultant Miles L. Colean in his 1956 construction forecast in last month's FORUM.

Commerce Dept. and the Securities and Exchange Commission in their latest reading last month on the accelerating upturn in spending for industrial plants and equipment revised their 1955 forecast 3% above estimates made at the start of the year. With equipment, they predicted, the 1955 total will now reach $27.9 billion, just 1% below the $28.3 billion record set in 1953. More significantly, however, the seasonally adjusted rate reached $29 billion annually in the third quarter of this year, in the current quarter is still climbing and expected to hit $29.7 billion, far above the previous seasonally adjusted record, $28.8 billion in '53's third quarter.

Commerce and Labor data show the steady increase in construction outlays for this expansion ever since July, '54 (see chart). Cumulative expenditures for the first eight months of this year were 13% greater than in January-August last year; August expenditures this year were a fat 25% ahead of Aug. '54.

Texas in the lead. As this widespread spending for new industrial buildings mounted, some states got more than others. Leading was Texas with a lion's share, 15%. Next was New Jersey, with about 8%. Then came Ohio, California, Pennsylvania, and Michigan.

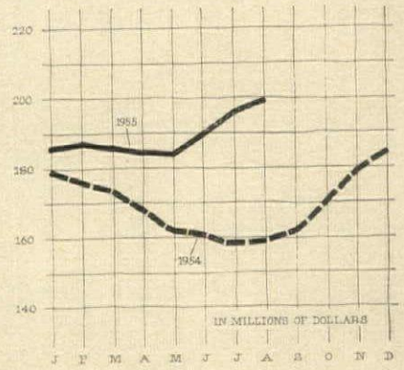
In general, the Northeast was losing some of its share; the South was gaining; the Midwest was keeping its portion, and the Far West was losing a bit compared with years past. But none of this had much meaning at the local level. New England was losing ground, but many an individual community in New England was getting an industrial plant. Nor did it mean that every city in Georgia could sit back and expect a textile mill to drop into its cotton fields.

Governors hit the road. Like drones looking for a queen bee, state and local officials were seeking industries as the symbols—and fountainheads—of prosperity and fulfilled wants. Last month West Virginia's Governor William C. Marland went to Chicago hunting for new industries for his state, repeating reception and entertainment drummer tactics used in an earlier sales trip to New York in June. On advice of the Arthur D. Little Co. of Cambridge, Mass., industrial consultants, he avoided a "shotgun" approach and was soliciting firms in only four specific fields: apparels, chemicals, metal fabrication, and woodworking.

Marland was only one of several marchers in the governors' parade. Governor James E. Folsom of Alabama was on the road last year. Others out in pursuit of new plants this year included Governor Frank Clement of Tennessee, Governor Marvin Griffin of Georgia (who went to Havana as well as New York and Chicago) and Governor Leroy Collins of Florida, who hit Boston, New York, and Philadelphia during the summer, goes next to the Midwest.

Luring on the governors, and lesser functionaries of various state and local industrial solicitation agencies, was the realization that new plants mean far more than additional taxes. A variety of secondary benefits are anticipated whenever a flat tract to windward of town is set aside as an "industrial area," "industry park," "industrial district," or "industry city."

Homebuilders count on building for the steadily employed; bankers prepare to stay open on Friday nights and order a special payroll window installed; contractors prepare to lay roads, culverts, and install utilities; butchers, bakers, automobile dealers, and public utilities calculate the benefits they will reap.

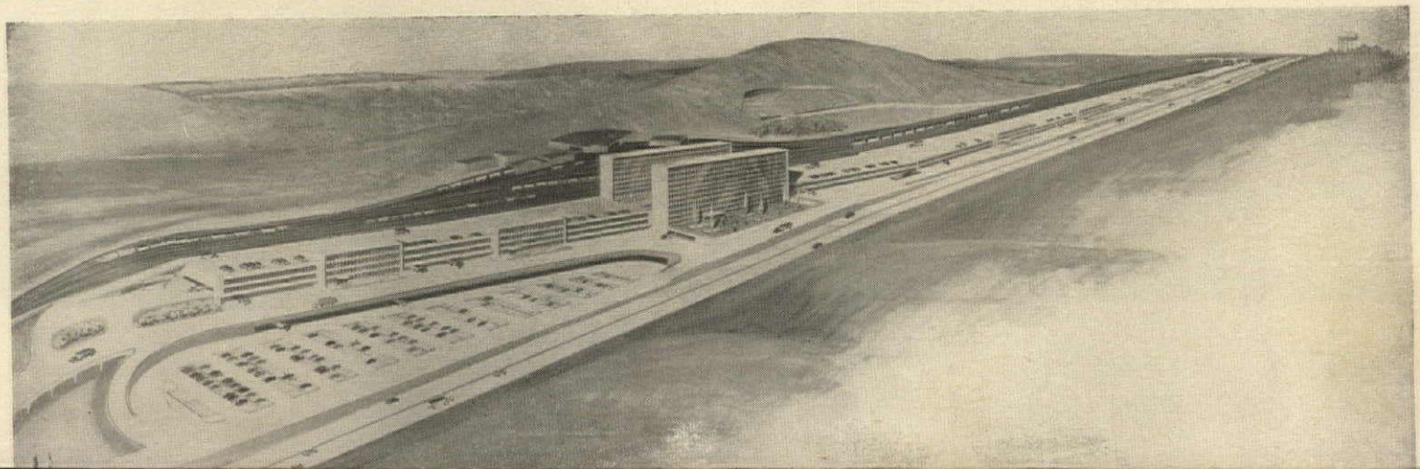


PRIVATE INDUSTRIAL construction outlays in August were $199 million, a 25% gain over Aug. '54, according to Commerce and Labor Dept. data. Except for an almost imperceptible dip from $187 to $183 million between February and May, they have been increasing steadily ever since July '54.

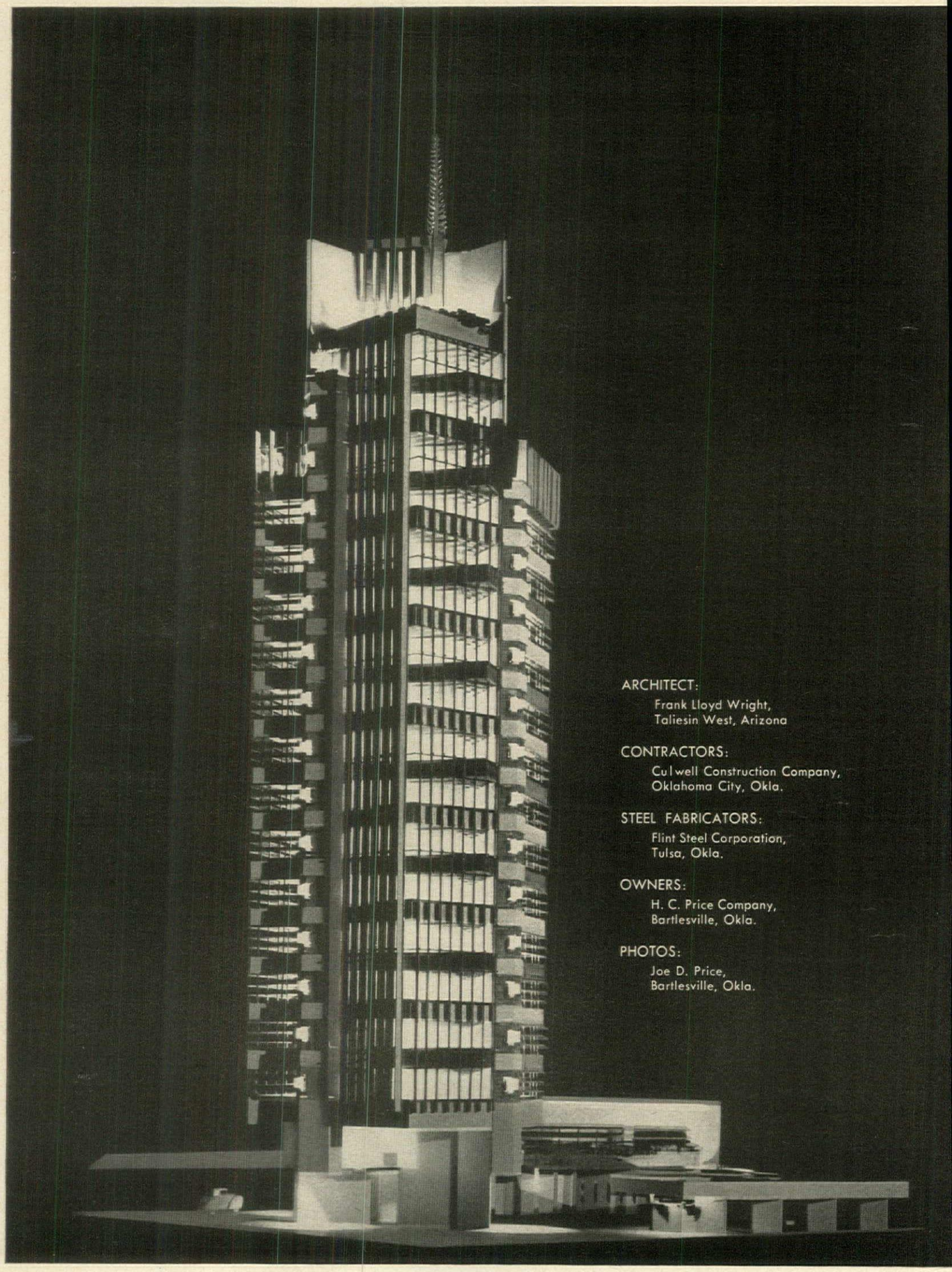
Song for the industrialist. And, with so much depending on the decision of an industry or company to move onto the old Snopes farm (now Industry City), solicitors and contact men were leaving little to chance. Basic plant site requirements were burned into the memories of state, county, and city industry wooers. With positive assurance they were telling almost any company representative who happened to ask:

"Our labor pool is full to overflowing; more than you need. . . . Our labor rates are fair (confidentially, our people don't like unions much) and our workers stick to the job. . . . We've got good, flat, sandy, gravel land on highways and railroads—at acreage prices. . . . Don't worry about moving your supervisors and executives to Our Town; we've got good schools and we're known as the cultural center of the area. . . . We've got model parochial and public school systems. . . . You can buy anything in our stores (and at lower prices than in Chicago . . . Boston, New York and New Orleans). . . . We've got hardly any debt, and taxes haven't gone

continued on p. 12



PARKWAY TERMINAL: This industrial, warehouse and office building to be sandwiched between the Penn-Lincoln Parkway and Pittsburgh & West Virginia Railroad lines would be four fifths of a mile long, provide roof parking for 2,500 autos as well as a 500-car parking lot. Virtually a self-contained city 3 mi. from Pittsburgh's Golden Triangle, this $30 million planned industrial development would have both extensive truck docks and sidings for 100 railroad cars. Architects: Kuhn and Newcomer and Shell, Deeter & Stott.



ARCHITECT:
Frank Lloyd Wright,
Taliesin West, Arizona

CONTRACTORS:
Culwell Construction Company,
Oklahoma City, Okla.

STEEL FABRICATORS:
Flint Steel Corporation,
Tulsa, Okla.

OWNERS:
H. C. Price Company,
Bartlesville, Okla.

PHOTOS:
Joe D. Price,
Bartlesville, Okla.

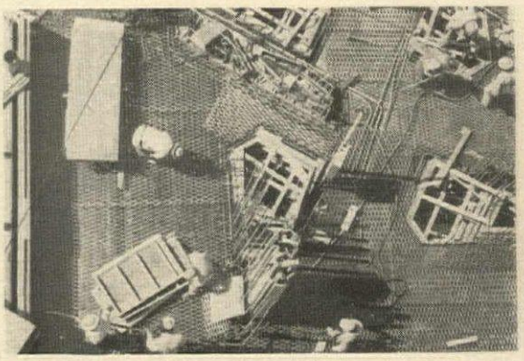
For the new Price Tower in Bartlesville, Oklahoma

—IT'S WHEELING STEELCRETE!

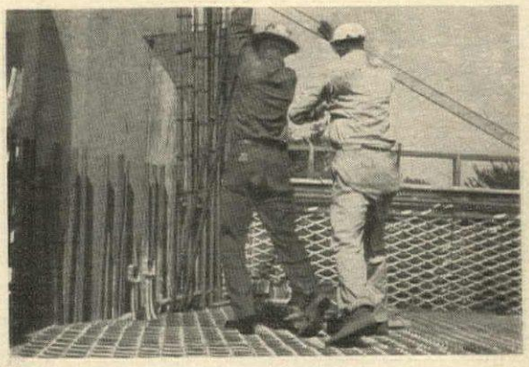
Aside from its striking appearance, probably the most unconventional feature of the new Price Tower is the inclusion of one quadrant of apartment units along with its three quadrants of offices. And yet, because of its design and versatility of materials used, the entire 186-foot building is only one-seventh the weight of similarly sized buildings in New York City's Rockefeller Center.

Cantilever construction is achieved with floors and walls suspended from four vertical reinforced concrete supports . . . reinforced with over 395 tons of Wheeling Steelcrete Expanded Metal Reinforcing . . . solid steel mesh expanded from 3/8" carbon steel plate. Steelcrete is one of the many dependable Wheeling products specified and used with confidence by architects and builders.

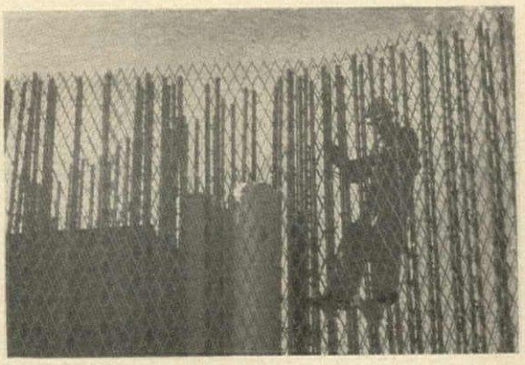
The complete line of Wheeling Building Materials includes Steelcrete Reinforcing Mesh, Expanded Metal, ExM Gratings, Metal Lath and Accessories, Tri-Rib Steel Roof Deck, ExM Angle Frame Partitions, Steelcrete Bank Vault Reinforcing, and SofTite Cop-R-Loy Galvanized Sheets.



Floor plan showing reinforcing steel in place. The STEELCRETE *reinforcements assure proper distribution of steel at low placing costs.*



Heavy STEELCRETE *reinforcing mesh in floor can be used as a working level until concrete is poured. No special catwalks or temporary "bridges" for concrete buggies are required.*



Wall area using a combination of STEELCRETE *and bars to obtain desired reinforcements. Produced in 3" x 8" diamond shape,* STEELCRETE *offers up to 1½ sq. in. of area to the foot of width.*

Wheeling
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WHEELING CORRUGATING COMPANY, WHEELING, WEST VIRGINIA

BUILDING MATERIALS DIVISION

ATLANTA BOSTON BUFFALO CHICAGO CINCINNATI CLEVELAND
DETROIT HOUSTON NEW YORK PHILADELPHIA ST. LOUIS SAN FRANCISCO

up in years (and won't). . . . We've got plenty of water, and gas lines; sewage and electricity run right up to the edge of Industry City. . . . The main trucking lines run right past the edge of Industry City on a new six-lane superhighway. . . . We've got vocational schools that will start training new help for your future needs, and our high school will substitute mechanical drawing for art, shop for French. . . . We want you."

This refrain, with variations, was being sung by such diverse groups as:

▸ The Commonwealth of Massachusetts, typical of many states, which through the Massachusetts Business Developing Corp. had as its function to "promote, develop, and advance the business possibilities of the Commonwealth of Massachusetts."

▸ The village of Deming, N. M., typical of many small towns and cities, which recently approved a $15 million revenue bond issue to construct building to lease to small industries.

▸ The Fort Washington (Pa.) Industrial Park, typical of privately developed industrial reservations, which announced to all industrial comers that it is located within 100 mi. of 21 million population, within 500 mi. of 65 million population and offered a complete package plan of financing, engineering, and construction.

Once rivers; now roads. The New York State Thruway, typical of express highways, invited industrial plants to take root along its concrete channel. Bertram D. Tallamy, chairman of the New York State Thruway Authority, reported that some $150 million in new plant investment had already been made along the uncompleted superroute. This was not unexpected, for such had been the experience of older expressways in other states, and of cities with metropolitan expressways to whisk workers to and from revived central-city industrial districts.

Some enthusiastic backers of toll highways were thinking in terms of systems of satellite plants along their roads, with parts and assemblies being moved from plant to plant, as though the road were part of a huge production line.

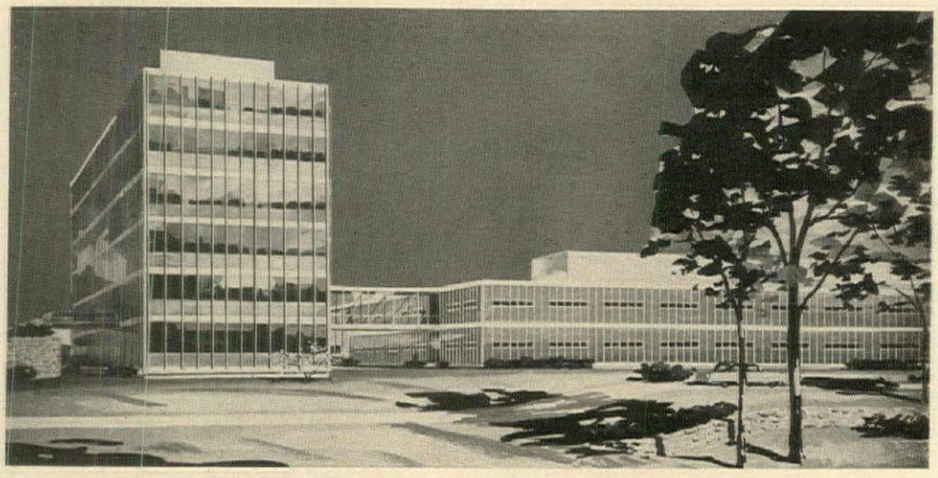
But not everyone, everywhere, was in favor of this intense wooing. Dissenting voices arose on three fronts.

▸ The labor unions, especially the AFL, but with the concurrence of the CIO, were bitterly opposed to the luring of industry southward. Conceding that "by far the majority of firms which have located in the South have done so for sound economic reasons," an AFL report said, "a growing number of firms have been attracted to the South . . . because at their new Southern locality they could obtain special subsidies in the form of a free plant, low rent, tax concessions or low wage rates and labor standards."

▸ Then there were the unreconciled, and generally gilt-edged big city suburbs. A trip along the typical gold coast of Long Island Sound on the Connecticut shore near New York City showed New Canaan, Darien, Westport, and Wilton fighting to stay white collar; Stamford and Norwalk fighting for more blue collar; and Greenwich in a schizophrenic mood, willing to settle for white collar with blue piping. With many a hem and haw, leading Greenwich officials were warning the town that they either must let in light industry (the emphasis is on the word "light") or prepare to pay heavier taxes.

▸ There were the holdouts among big city industrial realtors who felt that the stampede to greener pastures was not altogether wholesome. Said New York Industrial Broker C. Grant Keck, speaking for his colleagues of Chicago, Philadelphia, St. Louis, and other metropolitan centers: "With all its faults New York City still remains one of the greatest industrial sections in the world. There is no other place where a small manufacturer can go into business with less money and fewer facilities. Everything is available to the manufacturer through a 10¢ phone call—machine tools, materials, equipment, or good labor market, plus an unlimited amount of risk capital for the businessman with enterprise and knowhow."

Market-wise, a national survey by the Society of Industrial Realtors found prices for plant and warehouse sites higher in August than a year earlier. This was attributed mainly to an increasing scarcity of suitable vacant land, accentuated by competition from homebuilders. Prices for modern one-story buildings were reported generally stable, but tending upward, while prices for most older multistory structures were reported 5% to 25% below Aug. '54.



Glass-covered structures for glass research center

In Harmar Township near Pittsburgh last month, construction was started on these two glass research center buildings for Pittsburgh Plate Glass Co. designed with virtually all glass exteriors by Skidmore, Owings & Merrill. The six-story basic research building (1) will have about 70,000 sq. ft. of floor area for administrative offices, library, chemical, physical and analytical laboratories. The adjoining 170,000 sq. ft. development and control building will be a one-story and mezzanine structure, with a high bay designed to accommodate pilot plant equipment and provide ventilation over high-temperature areas such as tanks and furnaces. For the greatest flexibility, movable partitions will predominate.

PBS chief sees lease-purchase costs at only $1 per sq. ft.; builder rule eased

Public Buildings Commissioner Peter A. Strobel estimated last month that the new federal lease-purchase construction program will enable the government to obtain space for an average of only $1 per sq. ft., compared with $4 for good office space in Washington these days—in both cases exclusive of maintenance and operating expenses. Main basis on which Strobel calculated the $1 lease-purchase expense: a 50-year life for each building, but financing and acquisition costs for a maximum of only 25 years (and in some cases as little as 10 years) after which the government will own each structure free and clear.

PBS has approval for 26 lease-purchase projects totaling $91 million, six of them already under architectural contracts. By next spring Strobel hopes to have "watchdog" approval from the Senate and House public works committees to boost this by another 40 to 50 buildings costing another $150 to $160 million.

The separate Post Office lease-purchase program now totals 27 projects costing about $14 million. Combined with its straight leasing program, the Post Office in the last 18 months has promoted the start of 600 new buildings—more than 1½ every working day—at a total cost of about $49 million.

Under a construction rule modification recommended by PBS' advisory committee on architectural and building standards and applicable to lease-purchase and all other PBS construction, the general contractor will henceforth be required to do only 12%, rather than 25% of the construction with his own work force.

Metal shortages hit building: copper, critical; aluminum, tight; steel, close

The three basic metals most necessary for big building—steel, copper, and aluminum—were all suffering shortage illnesses of different degrees of severity last month. Main reason: the heavy increases in demand for all of them as the dynamic, expanding US economy rose to new heights. Secondary reason: heavy hurricane-flood damage to New England's copper and brass plants in August, and still greater demands for steel for hurricane-flood area rebuilding and repairs.

- Steel was the least indisposed, had a relatively minor fever, although there was no immediate prospect it would experience any early return to normal.
- New, young aluminum was in a somewhat more serious, but not a critical state. Its main trouble was its inability to expand production facilities fast enough to keep up with all the new uses demanding it in ever increasing quantities.
- Copper, however, was really sick, practically went into "shock" from the hurricane-flood after being weakened earlier in the year by a serious strike attack.

Effects on building. Construction felt both direct and sympathetic reactions from its suppliers' ill health. It meant the possibility of delays in obtaining building materials that could be very costly. It also meant higher prices for virtually all metal-component materials. Even if production gains eliminated absolute scarcities or troublesome delivery delays, there was little hope of any subsequent declines in basic prices for the metal products needed in building.

Copper crisis. The copper industry was caught in the tightest squeeze in its history. Production of 80,000 tons of refined copper, more than 5% of the nation's normal annual consumption, was lost during the 43-day strike last summer by the Mine, Mill & Smelter Workers.

Before it could recover from this blow, hurricane Diane's floods hit the New England's brass mills worse than any other industry. A Commerce Dept. survey completed a month after this disaster found that the storm-borne floods had knocked out 32% of the nation's brass mill production. Half of this was restored by mid-September, but full production was not expected before Nov. 1.

To help relieve the crisis, ODM authorized the diversion to industry of 11,000 tons of copper that had been scheduled for delivery to the defense stockpile during the fourth quarter.

Through all last year refined copper prices were 30¢ lb., but this February rose to 33¢, in April 35¢, last month had reached 43¢. The catch, however, was that practically none could be found at 43¢. The real price, with premiums to get delivery, was somewhere around 53 to 54¢. Small wonder that wire, plumbing and brass mill construction materials suppliers last month were hard put to fill builders' orders, and when they could deliver were quoting higher prices. Until more stability returned to the copper and brass industries there was no one who would venture to estimate just how high prices of different items might go, or when they would halt in their uptrend. At month's end some industry sources suggested that the worst peak of the pinch for construction would occur in another 60 to 90 days.

Aluminum picture. Since January aluminum prices have advanced close to 10%, and new and constantly heavier demands have steadily built up shortage conditions. In many quarters it was suggested that the soaring prices would divert some copper users to aluminum as a substitute. But the aluminum industry could provide no relief anyway. The flood of orders coming in already was more than it could handle, and it could not get on a current basis until at least a year from now.

The so-called "third round" of rapid-tax-program, government-encouraged aluminum capacity expansion took place last month. This involved only two actions: 1) a contract by the GSA to sell to the Kaiser Aluminum & Chemical Corp. for $3.7 million the aluminum extrusion plant at Halethorpe, Md. that Kaiser has been operating for the government on a lease basis, and 2) the granting of federal financing guarantees to the Harvey Machine Co. of Torrance, Calif. so it could enter the primary aluminum production business with a new $65 million plant to be built in The Dalles, Ore. This would make Harvey the fourth US producer, joining Alcoa, Reynolds, Kaiser, and Anaconda, which only got into production this summer in a 60,000 ton per year plant in Montana.

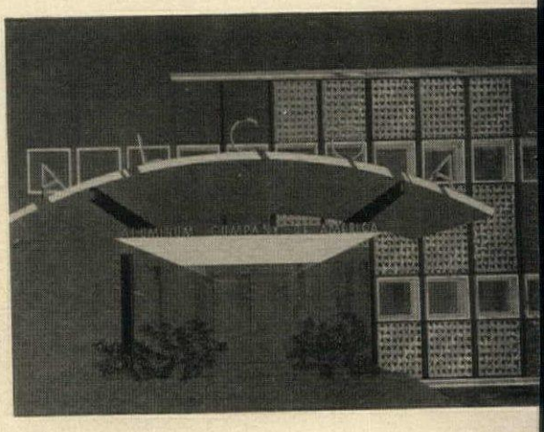
Defense stockpiling by the government is an important factor tightening the aluminum supply. The government's exact holdings and acquisitions are classified information, but because of heavy industry demands it released producers from delivering 200,000 tons so far this year, while the annual rate of production has been running around 1.6 million tons. The government's failure to approve special assistance for any further expansion at this time also seems to confirm the belief expressed by some industry leaders that except for stockpiling there would be surplus output.

Steel closest to stability. Although structural steel orders in July were the highest of any month in history (see p. 32), there were no serious delays reported in deliveries, and the backlog of unfilled orders, 1.6 million tons, was still far below the 2.1 million ton backlog in most of 1953 and almost 1.8 million tons at the start of 1954. Last year the industry spent $680 million for expansion. In January it was expected to spend another $695 million this year, but last month the Commerce Dept. and SEC estimated actual outlays would top $870 million.

Construction, which took 15.7% of the steel industry's output last year (its biggest single customer except autos, 19.4%) had to adjust immediately to an increase of about $7 a ton in the cost of structurals after steel signed its new labor contract in July. These are not expected to rise again in the immediate foreseeable future.

NEWS *continued on p. 17*



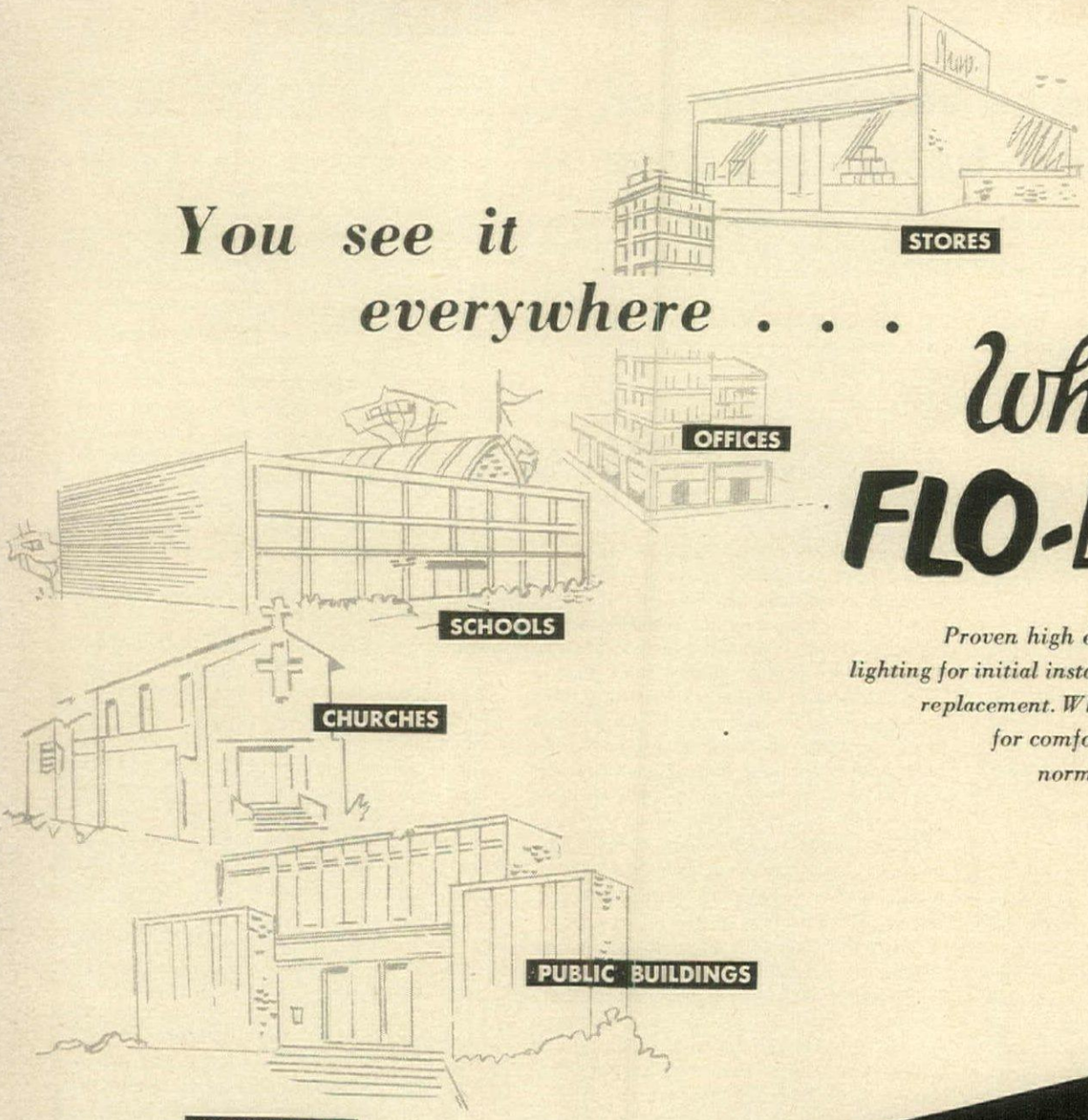


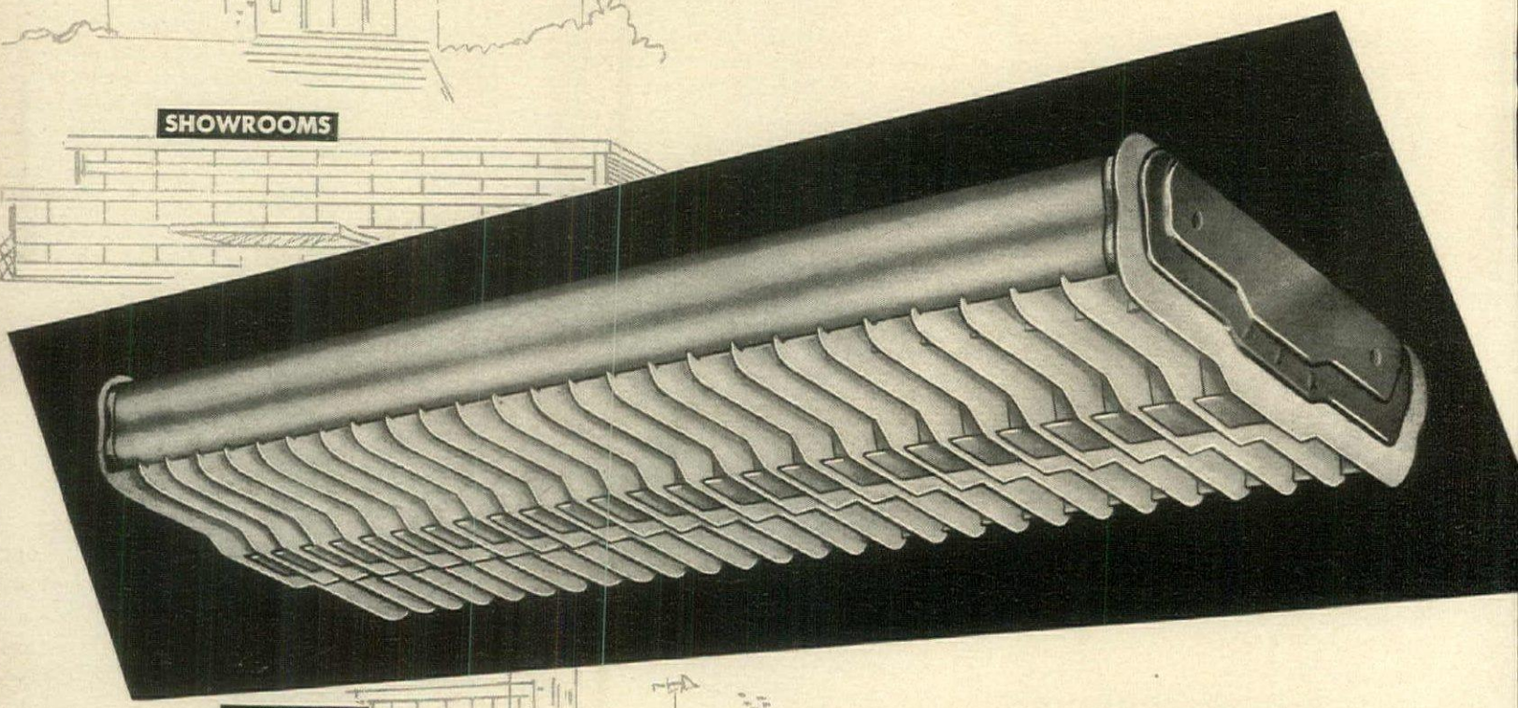
ALUMINUM MAKERS' SHOWCASES—Reynolds Metals Co. broke ground last month for a $10 million executive building for its own use (top) just outside Richmond, Va. Its varicolored vertical aluminum louvers on east and west walls will open and close automatically in relation to movement of the sun. Architects: Skidmore, Owings & Merrill. For its Atlanta sales staff building (r), Aluminum Company of America planned a structure with a "vivid gold aluminum mesh wall design suspended several inches from a blue aluminum curtain wall," but with end walls of marble. Architects: Schell, Deeter & Stott, of Pittsburgh.

You see it everywhere . . .

Wheeler FLO-LINER

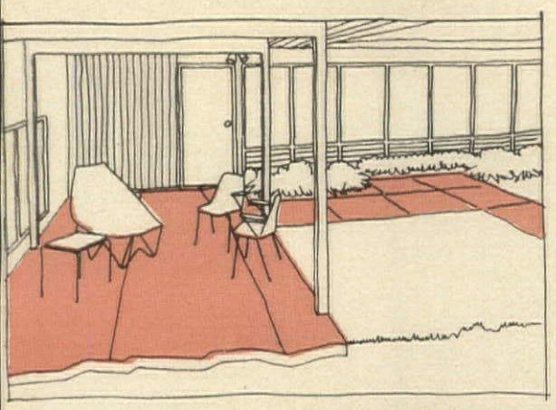
Proven high efficiency fluorescent lighting for initial installation or replacement. Wheeler-engineered for comfortable low brightness at all normal viewing angles.



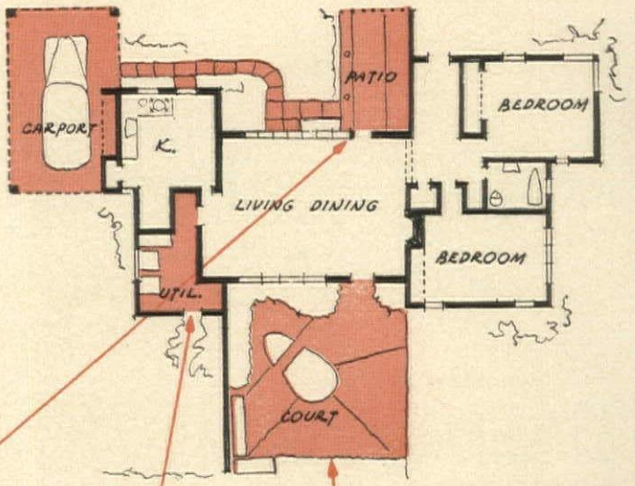


FOR FURTHER INFORMATION,
WRITE FOR BULLETIN NO. 92

WHEELER REFLECTOR COMPANY
275 Congress Street Boston 10, Mass.
Distributed Exclusively through Electrical Wholesalers



Fused color. *Not a paint or coating! Colorundum is troweled into the concrete topping and becomes an integral part of the surface, producing beauty and durability.*





Nat'l Homes Corp. photo



J. Shulman photo



E. Braun photo

Beautify concrete floors

Colorundum floors give luxury appearance and extra wear resistance at low cost

Here's a simple and economical solution to the problem of exposed or uncarpeted areas of drab, colorless concrete. It's called Colorundum. And the fused-color concrete floor it provides lends a dramatic and practical accent to patios, walkways, and service floors. Colorundum cuts air conditioning costs, too, because its color properties keep sunlit areas substantially cooler than ordinary concrete. Yet its cost is just a fraction of that of tile floors.

Colorundum is far more resistant to traffic than ordinary concrete floors. It is a balanced formulation of nonslip aggregate (next to the diamond in hardness), water-repellent compounds, and durable colors . . . contains no silica, quartz, or sand. It is easy to keep clean, and since it contains no metal, it will not rust or stain.

Colorundum is available in eleven decorator colors.

Subsidiary of Sun Chemical Corp.

A. C. Horn Co., Inc.

Dept. H11-1016, Long Island City 1, N. Y.

Please send me complete information on Colorundum.

*Name*_____ *Title*_____

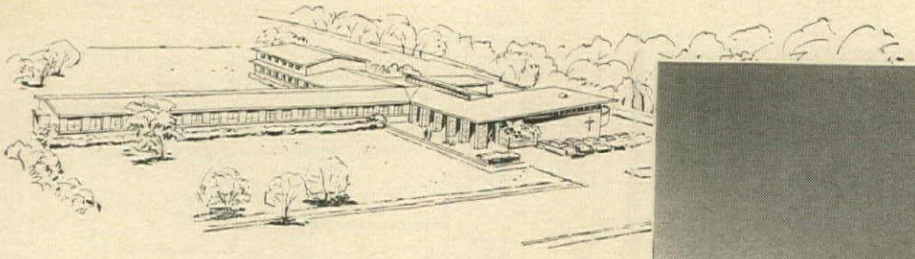
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DIVISIONS OF SUN CHEMICAL CORPORATION

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ST. JOSEPH'S HOSTEL,
Dallas, Texas

Architect: *George Dahl and Associates*
General Contractor: *Sachs & Stevens*
Acoustical Contractor: *United Tile Company*
Acoustical Materials: *Armstrong Travertone*
Armstrong Cushiontone

Restful comfort and quiet beauty provided by the Travertone* acoustical ceiling make residents and guests feel pleasantly at home. Because Travertone's fissured surface is so easy to maintain, it stays fresh and new-looking for many years.

*TRADE-MARK

Specially designed home for the aged features quiet

As one of the first architect-designed homes for the aged, St. Joseph's Hostel in Dallas is one of the first specifically planned to meet the needs and problems of the elderly.

Because the project called for new construction and not mere remodeling on an existing building, the architect was able to create an atmosphere of modern comfort and luxury for the Hostel's residents. The basic T-shape of the structure provides maximum air and light in all rooms, while sound-absorbing Armstrong ceilings assure restful quiet throughout.

In public areas of the building, such as the lounges and cafeteria, ceilings of Armstrong Travertone are used. Travertone was chosen for its beauty as well as for its noise-quieting efficiency. A handsomely textured mineral wool material, Travertone absorbs up to 80% of the sound that strikes it. Incombustible Travertone also adds a measure of fire safety.

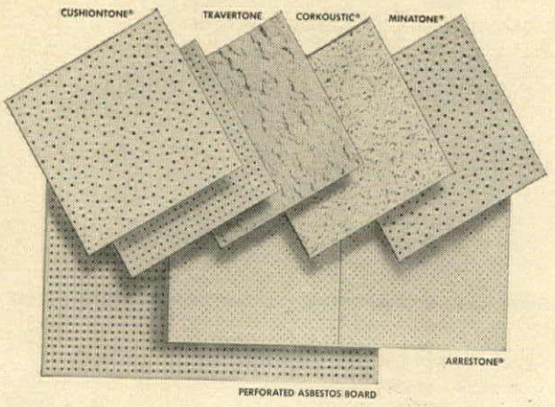
To quiet the residential wings, Armstrong Cushiontone was installed. Cushiontone is a low-cost, perforated wood fiber tile often used when large areas must be sound conditioned economically. Both the Cushiontone and Travertone were mechanically suspended to provide easy access to utility lines between ceiling and roof deck.

You can get full details on the entire line of Armstrong acoustical products by calling in your Armstrong Acoustical Contractor. For the free booklet, "Armstrong Acoustical Materials," write Armstrong Cork Company, 4210 Rooney Street, Lancaster, Penna.

Armstrong
ACOUSTICAL MATERIALS



By muffling noise of footsteps and voices, the Cushiontone ceiling keeps this corridor and adjoining TV area comfortably quiet. Cushiontone's white paint finish can be cleaned or repainted easily without loss of acoustical efficiency.



Seattle files $700,000 suit against War Memorial building contractor

The difference between "guarantee" and "warranty" could mean about $700,000 to Kuney-Johnson Co., West Coast contracting firm that last month was feeling the legal wrath of the city of Seattle.

The origins of a Seattle suit against Kuney-Johnson were in the city's new 15-story functional War Memorial police-and-public-health building (FORUM, Aug. '52). Externally it would be hard to see any reason for a lawsuit, but inside a perlite plaster aggregate is alleged to have caused grievous damage to the building (FORUM, Sept. '54, News).

Kuney-Johnson was general contractor on the building. Joseph J. Jefferson & Son, which Kuney-Johnson is endeavoring to make a co-defendent, was plastering subcontractor. Supplier of the perlite aggregate, known as Dantor, was Dant & Russell, of Portland, Ore. Before it was taken off the market about three years ago, they sold Dantor, a heat-treated, siliceous volcanic rock, all over the Northwest.

Last summer, when proud Seattle citizens first became aroused over deterioration of their memorial building, the Perlite Institute sidestepped a controversy over the material. Institute Secretary-Treasurer R. L. Davis said the difficulty "seems to be pointed at one producer's perlite that is no longer available." The institute issues a certification label for approved perlites: Dantor had no such approval.

At first there was some controversy over exact cause of the building's deteriorating walls and ceilings. But now the city seemed to have made up its mind about specific causes and responsibility, in its formal lawsuit. This charges that the contractor—actually it named both Kuney-Johnson and its performance bonder, United Pacific Insurance Co.—substituted Dantor for traditional sand-plaster. And when it made the substitution, says the suit, Kuney-Johnson warranted that Dantor was equal to or better than sand plaster.

But it was not, the suit claims; it failed and "by reason of a volumetric increase in the plaster caused great damage to said building consisting of deflection in ceilings, raising of partition panels from floor surfaces, severe fractures in walls, ceilings, ceramic tile and glass brick walls and also damage to walls on the west side of said building by water leakage, all of which damage is continuing."

In its defense, Kuney-Johnson was expected to contend that its year's guarantee on workmanship and materials had long since expired. Seattle was ready for this argument: Corporation Counsel A. C. Van Soelen said in his suit that in making a substitution the contractor warranted the material. And since, in its legal opinion, Seattle did not get an equal or better material, the city says the warranty supersedes the guarantee.

It is a fine legal point, and Van Soelen concedes it may take deliberations of the state's supreme court to settle the issue before the case itself can be tried on its merits. If the city is upheld on their point, and various other demurrers and motions are overruled, Kuney-Johnson Co., United Pacific Insurance Co., and—if Kuney-Johnson can do it—Joseph J. Jefferson & Son, will then have to defend themselves against claims totaling exactly $707,471.54.

Shopping centers receiving unusual decorative notes

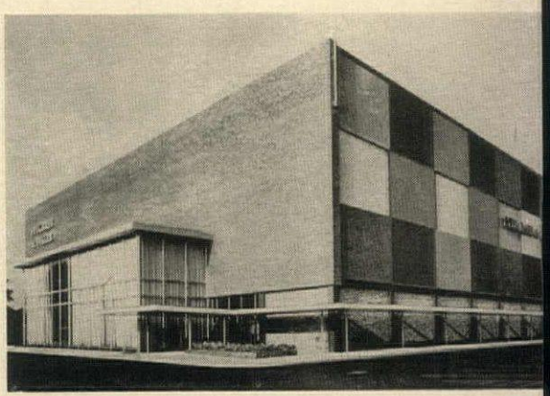
To give Long Island's new Roosevelt Field Shopping Center a distinctive note and an open-but-covered area where outdoor functions could be held in spite of rain, Designer I. M. Pei devised a huge steel frame and glass umbrella with a 150′ diameter (see cut). Other amenities in this $30 million Webb & Knapp project being built by George A. Fuller Co.: summer and winter skating rink, bandstand, covered walks wired for music, an auditorium for the use of merchants or community organizations, and parking space for 11,000 automobiles.

Architects for their center, which will have more than 1 million sq. ft. of rentable area in its initial development (eventually 1.6 million sq. ft.) are Boehler & Brugnoni of New York. Separate architects for the building that will house a 320,000 sq. ft. branch of R. H. Macy & Co. (its largest) are Skidmore, Owings & Merrill.

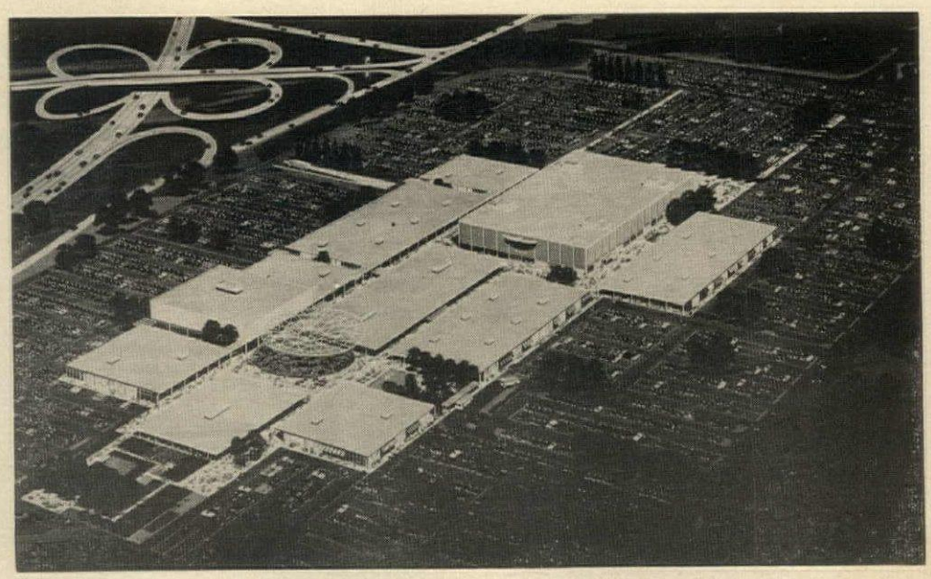
In Richmond Heights, Mo., many dramatic and colorful features have been incorporated into the suburban branch building Stix, Baer & Fuller of St. Louis opened in August in the Westroads Shopping Center. Projecting from the eastern end of the building is a two-story high glass-enclosed "court" (see cut) decorated inside with a mosaic-lined pool, brick floor and a large 35′ tree form that will be trimmed seasonally with appropriate decorations. The north exterior wall (below) consists of large glass mosaic panels in various green tones from Treviso, Italy. Vertical aluminum louvers separating these into checkerboard pattern conceal air-conditioning intakes. The first-floor west wall is plate glass from floor to ceiling, recessed in an arcade under the three upper floors of the 250,000 sq. ft. structure. Architects and engineers: John Graham & Co. of Seattle and Welton Becket & Associates of Los Angeles. Landscaping and interior plantings: Landscape Architect Robert Herrick Carter.

Producers' notes:

Lukens Steel Co. announced it has been licensed by U. S. Steel to manufacture and sell the latter's high-strength constructional alloy "T-1" steel and plans to push its greater use in wide plates, bridge and structural members, sections and connections. "T-1" has a very high yield strength (90,000 psi), according to Lukens, and is weldable, and about as easy to fabricate as carbon steel. . . . National Gypsum boosted its 5-year, $75 million expansion program by another $20 million. . . . The Murray Corp. said four of the largest kilns in the world, especially suited for the production of colored fixtures, would be included in a $5 million expansion of the vitreous china sanitary ware plant of its Eljer division in Ford City, Pa.



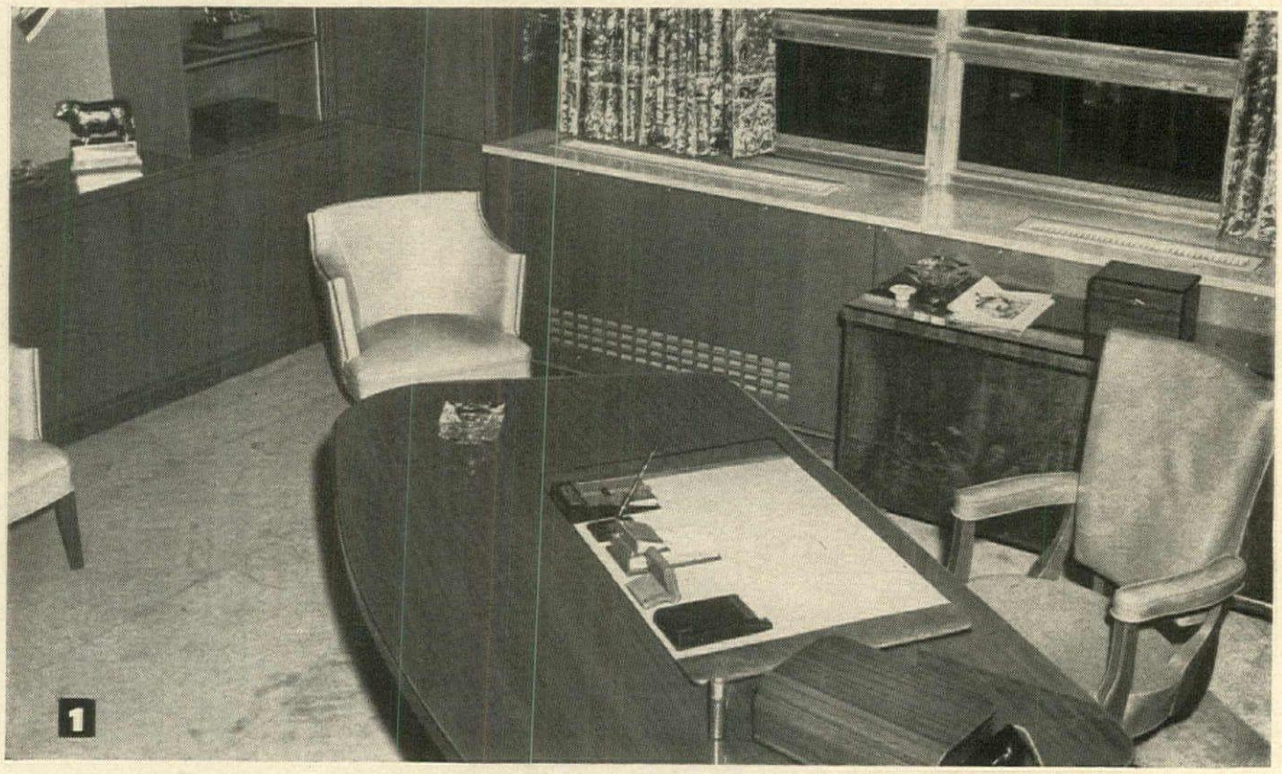
STIX, BAER & FULLER: GLASS MOSAIC WALL



LONG ISLAND PROJECT WILL HAVE HUGE GLASS UMBRELLA OVER COURT, SKATING RINK

NEWS *continued on p. 20*

For heating or ventilating new or existing offices, stores, schools or public buildings



Modine Cabinet Units—

so efficient, so versatile, so practical

NOTHING can match the performance, flexibility and economy of a Modine Cabinet Unit when it comes to heating, cooling and ventilating. It's the modern way to year 'round comfort yet costs less to install than a unit ventilator. Recessed in the wall or concealed behind a partition or false ceiling to conserve space, a Modine Cabinet Unit provides quick, positive, quiet distribution of warm or cool air for rooms, entrances and corridors of all sizes.

Choose from five models—120 to 640 Edr. Some heat with hot water, cool with chilled water . . . others use hot water or steam for heating only. Find out how one smartly-styled Modine Cabinet Unit can do the job of two or three old-fashioned, unsightly radiators—do it better for less. Call the Modine representative listed in your classified phone book or write for Bulletin 552—Modine Manufacturing Co., 1507 DeKoven Ave., Racine, Wis.

1. Impressive modern executive office uses completely concealed Type FT cabinet unit.
2. Entrance way of large department store has two Type FE cabinet units.
2. School hallway features recessed Type BT unit with plenum base.
4. Airport promenade utilizes Type BF cabinet units with plenum base.

Modine
CABINET UNITS

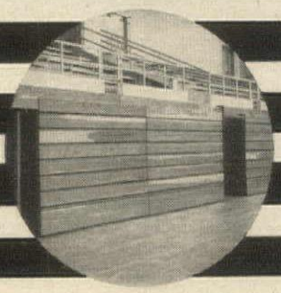


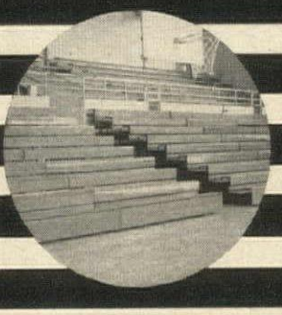
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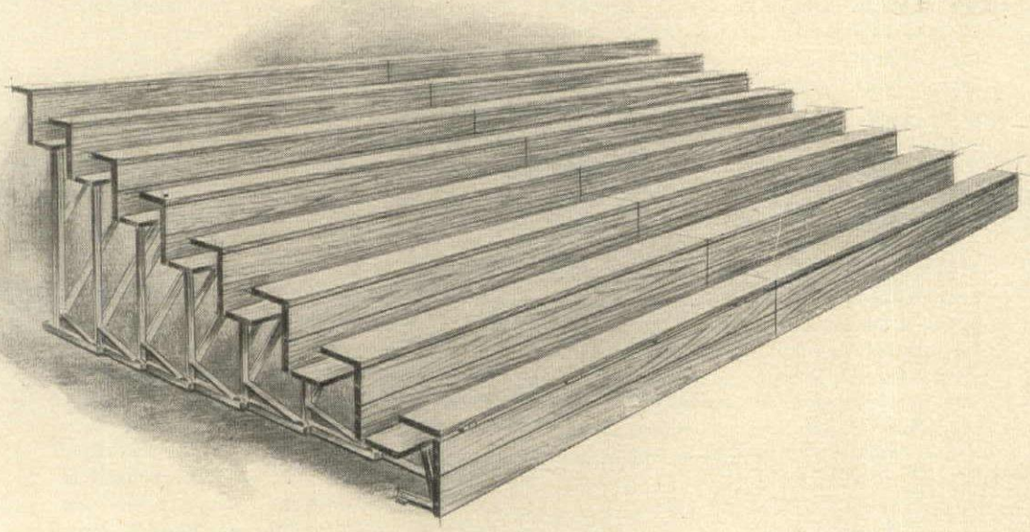






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The statement above neatly sums up what we have done to make Wayne the finest seating available today for your gymstand dollar.

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WAYNE

School crisis continues despite building and design gains, 14% greater spending

In Inglewood, Calif. last month almost 400 Morningside High School students were attending classes in 15 tents while awaiting completion of more buildings.

Despite the record construction of 60,000 new public elementary and high school classrooms since last fall, the national shortage as the new school year began was still 250,000 rooms, according to latest US Office of Education estimates. The deficit had been cut by 62,000 rooms in the last three years, it figured, but unless attacked with sharply increased vigor the shortage would still stand at 176,000 in 1960.

In a survey of public and parochial classrooms needed to keep pace with an increased enrollment of about 36% through 1965, Manhattan College put elementary and high school construction requirements at almost $1 billion annually for the next decade. The breakdown:

PUBLIC SCHOOLS—24,085 new buildings, or an average of over 2,400 a year at a cost of about $3.3 billion for elementary schools, $5.5 for high schools.

PAROCHIAL SCHOOLS—4,650 new elementary and high school buildings, or 465 a year; combined costs, about $1 billion.

Outlays on the rise. According to Commerce and Labor Dept. estimates, current expenditures for new educational buildings of all types, including college and university structures, amounted to $1.9 billion in the first eight months of 1955, or 14% above Jan. to Aug. '54 outlays (see chart). A 19% increase in public spending offset a 4% drop in private spending during this period.

Next year, however, according to Economist-Consultant Miles L. Colean's forecast in last month's FORUM, private educational building is expected to stage a comeback with a 10% increase over this year's outlays, and public expenditures score still another 10% increase over this year's big gains.

High bid hurdles. Some school projects may be delayed by the recent upturn in construction costs. Bids have been coming in far higher than estimated costs in a growing number of cases, and the government's new credit tightening policies have been pushing bond or financing costs somewhat higher. These two factors usually mean sponsors must trim building plans to stay within approved budget limits, or else hold up contract awards until they can obtain permission to borrow more money. Duration of these difficulties will depend mainly on how long it takes before costs stabilize again, and how long the government applies its anti-inflation, credit-restraining brakes.

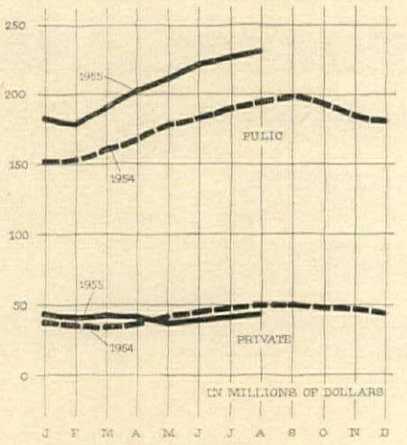
The continuing crisis of insufficient classrooms, compounded by cost increases, put added pressure behind all sorts of big and little proposals for relief:

▸ US aid to finance local construction, which was stymied in the last session of Congress, should have a much better chance of enactment next year, before the Congressional and Presidential elections. The administration would want to demonstrate that it had a going program to help alleviate the crisis; the Democrats would have to avoid any appearance of having blocked federal assistance legislation. But it remained to be seen how the two of them would get around the racial integration roadblock, the objections of southern Democrats who want nonrestricted federal help to build new segregated schools. Nor was the administration likely to start shaping any new legislative recommendations until after the long-heralded White House Conference on Education, Nov. 28 to Dec. 1.

▸ In New York City, the Mayor's Committee on School Utilization found that shifts in population were a large factor in creating a "misfit" situation: 225 elementary schools with an overload of 41,356 students, but at the same time 341 other schools with 80,000 spare desks. A *Times* editorial suggested one answer to the question of how to use these empty seats: "Bus transportation perhaps of whole classes, and teacher, from an overcrowded area to an underused school is the only large-scale answer. It isn't ideal, perhaps, but it is an answer." (Providence, R.I. has vacated seven old public schools since World War II. Three were demolished; one was sold and another leased to the Catholic diocese; one was converted into a Public Works Dept. drafting and storage headquarters; the seventh turned over to a social agency as a school for crippled children. There, however, the myriad difficulties of intermunicipal cooperation, maintenance and staffing demonstrated the obstacles to any extensive programs for bringing children in from the expanding suburbs to use older, no-longer-needed city schools.)

▸ Mayor Wagner also announced that New York was considering leasing "air rights" for commercial and apartment buildings above some of its choicest school building sites to help reduce the costs of new schools below. But as realization of the many drawbacks from an educational standpoint grew, prospects for any action along this line appeared to be pretty slim.

▸ In Florida a proposal was advanced to use existing schools 12 months a year, with classes staggered so a different group had its "summer" vacation every three months.

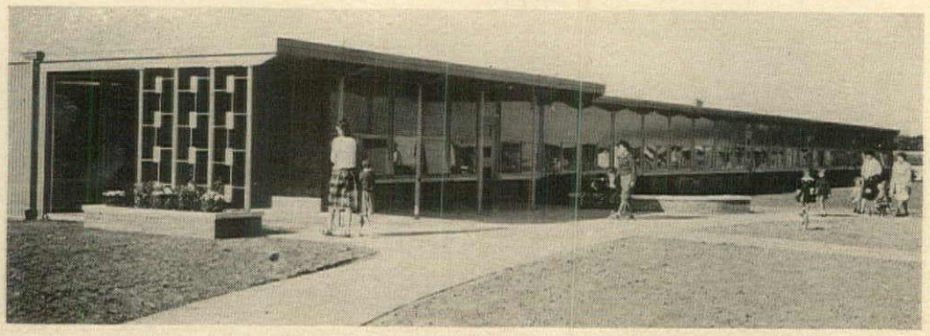


EDUCATIONAL CONSTRUCTION spending for the first eight months of 1955 was 14% greater than in Jan. to Aug. '54. Although spending for new private educational building trailed last year's outlays by 4%, public expenditures, $230 million in August and $1,640 million since January, were up 19% over 1954.

Builders, architects help. On a practical level, the classroom crisis also challenged architects and builders to develop new school design and construction methods to produce more schools faster and cheaper.

Notable advance in this direction last month was the opening of an eight-room prefabricated school in Lafayette, Ind., now being put into mass production there by the National Homes Corp. (see cut). This prefab designed by Walter Scholer & Associates, architects, cost $18,444 per classroom in Lafayette, was only 21 days abuilding. It consists of four standard two-classroom units, will later be enlarged to nine units in three three-unit bays connected by covered walks.

Local acceptance of this modern, flexible, expansible prefab (AF, April '55) was enthusiastic. Said School Board President Gray LeVitt of Lafayette: "This goes far beyond our fondest expectations. . . . The board was not willing to sacrifice any quality to save money. We feel we have saved $12,000 per unit and instead of sacrificing quality have increased it. It is certainly



PREFAB SCHOOL of National Homes Corp. in Lafayette, Ind., erected in only twenty-one days.

the most attractive school we have and the most soundproof. And we can evacuate the entire school in under 15 seconds if necessary." Said Fort Wayne, Ind., School Superintendent A. T. Lindley: "It has real quality. It is definitely an answer for a community with a school problem."

State school activities. Around the nation this year the states approached their school building problems and programs in various ways:

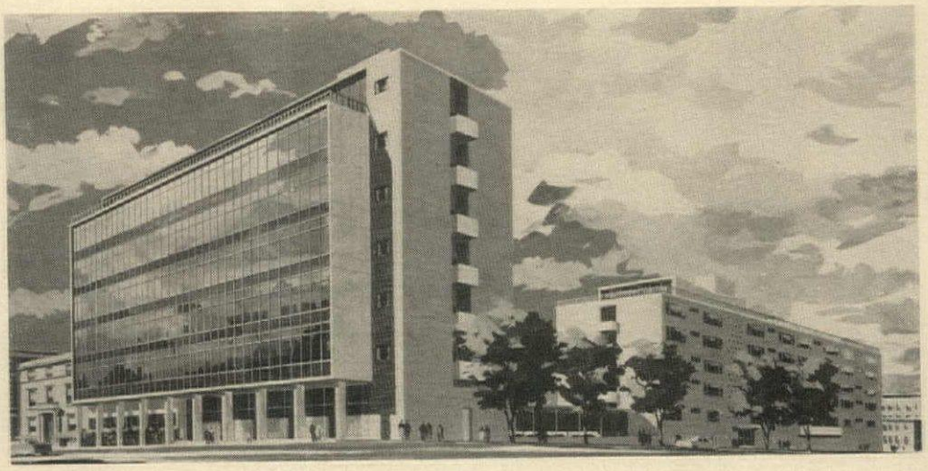
▸ Delaware's legislature authorized a $44 million state-assistance construction program with a portion of the funds allocated in the legislation for Negro schools. After attorneys pointed out that this might cloud the validity of bonds, because of the US Supreme Court's integration decisions, the legislature took the measure back for reconsideration before it had been signed by the governor.

▸ After a bill on the subject had been introduced in New Jersey's legislature, the state education board disclosed plans to relax its 10½′ ceiling requirement. Commissioner Frederick M. Raubinger said Tenafly would be permitted to build an elementary school with lower ceilings, but to resolve doubts about the savings to be achieved, before other communities were granted similar permission, Tenafly would be asked to obtain two sets of bids: one on a building with a 10½′ and the other with the 9′ ceilings it desires. Answering complaints that state building requirements are too rigid, Raubinger said they allow wide variations in construction, and schools erected under the state code have ranged all the way from $600 to $3,000 per pupil, from $15,000 to $45,000 per classroom.

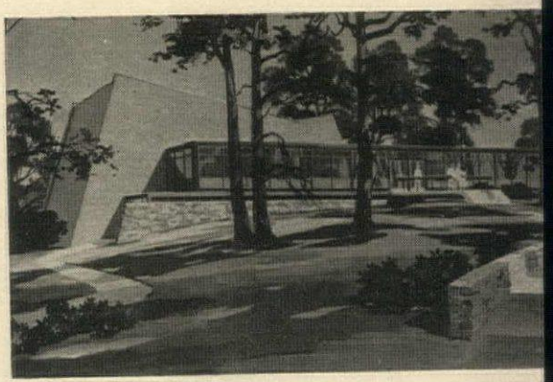
▸ California's legislature enacted a bill to allow local school districts to make lease-purchase construction arrangements. But the state education department objected that the measure would not help poorer districts; the governor pocket vetoed it.

▸ Michigan authorized a $100 million bond issue for state loans up to 25 years to "distressed" school districts if they were levying taxes of at least 13 mills for school construction purposes. It also authorized such districts to refinance existing school bonds for extended periods. In both cases, however, taxes can not be reduced below 13 mills.

On the community level, architects and educators stepped up their development of new kinds of schools to suit changing educational policy (see p. 129).



COMPLETELY FLEXIBLE INTERIORS will be provided in this contemporary seven-story building for the Moore Institute of Art, Science and Industry in Philadelphia to be started this fall from plans by Harbeson, Hough, Livingston & Larson. To the back will be constructed a new dormitory and infirmary building with glass-enclosed penthouse studios and recreation rooms, other interior walls and floors of finished structural concrete. Between these two buildings in the $3 million project: a modern glass and steel cafeteria said to be of "Japanese pagoda" style.



GLASS AND BRICK are being used together in this $250,000 Slosberg Music and Art Center under construction at Brandeis University, Waltham, Mass., designed by Harrison & Abramovitz. The central portion of the building will house a 250-seat recital hall. On three other sides around a glass-roofed central courtyard will be classrooms, studios, recording and transcription alcoves.

Main street area included in N.J. "blighted" district

Inclusion of nonblighted properties in urban renewal redevelopment projects still remained an unresolved problem for local redevelopment agencies, even though the US Supreme Court in reviewing a District of Columbia case last year upheld the general principle of allowing condemnation of such premises when needed to achieve a coordinated redevelopment. But there was still some question how far this power could be used in other cases, particularly when the nonslum property might be on the edge of a project site, rather than well within its boundaries.

In New Brunswick, N. J. last month, for instance, the local redevelopment agency was the defendant in a suit brought by property owners in a proposed redevelopment area They sought to have the state's redevelopment act declared unconstitutional, or, failing that, requested an order for prompt payment, at Jan. '55 valuations, for their properties if the agency could not be prevented from eventually taking them. They complained that municipal actions classifying their properties as "blighted" and earmarking them for the city without initiating any definite steps to buy or condemn them, put a curse on their present and future value that constituted a "taking" without compensation. They also protested the lack of any provision to compensate them for such losses in the event the agency never found a redeveloper, or abandoned its "tentative" plans.

Their greatest beef, however, was that the city's plans for a $10 to $15 million "Little Rockefeller Center" would condemn almost two full block-fronts of main street commercial properties they claimed were not blighted in the least. These apparently would only be included so the proposed hotel, office buildings, department store and specialty store project site could be shopped to prospective redevelopers with some highly desirable main street frontage. Present stores in this section included a jeweler, retail piano salesroom, two retail furriers and an air-conditioned restaurant. Excluded from this two-block main street frontage: a church.

If the local New Brunswick agency received a green light, many owners of substantial nonblighted main street properties in cities elsewhere might have considerable cause to pause while they pondered whether their own valuable, well-kept holdings might have no protection from urban renewal condemnation one day because of adjoining deteriorated sections.

US and Italian planners find each can teach other

From Italy last month came a neat brochure bringing to 11 US planners a happy memory and to 200 million people in both countries a fine portent. In it were the findings of the "Italo-American City and Regional Planning and Housing Seminar."

This was a splendid cultural interchange organized jointly by the private Italian National Institute of Urbanism, the Ministry of Public Works, the Productivity Committee, and the US State Department's USOM. Actually the prime instigators had been Philadelphia Architect Oskar Stonorov and his associate Frederick Gutheim on

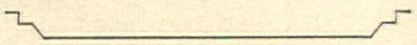
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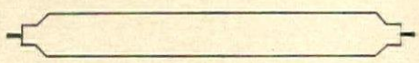
Marston's
San Diego, California

LUMICEL



A 24" x 24" white translucent single panel. The basic material is vinyl plastic, providing an effective balance between the transmission and diffusion of light emanating from a totally separate lighting fixture.

ACOUSTI-LUX



A 24" x 24" white translucent double panel fabricated of two formed units of the basic material, secured together around perimeter. A specific volume of air is contained between the two faces; diaphragmatic damping provides the sound absorption value.



Edgewater Beach Hotel
Chicago, Illinois

New Acousti-Celotex *lumicel* and *acousti-lux*

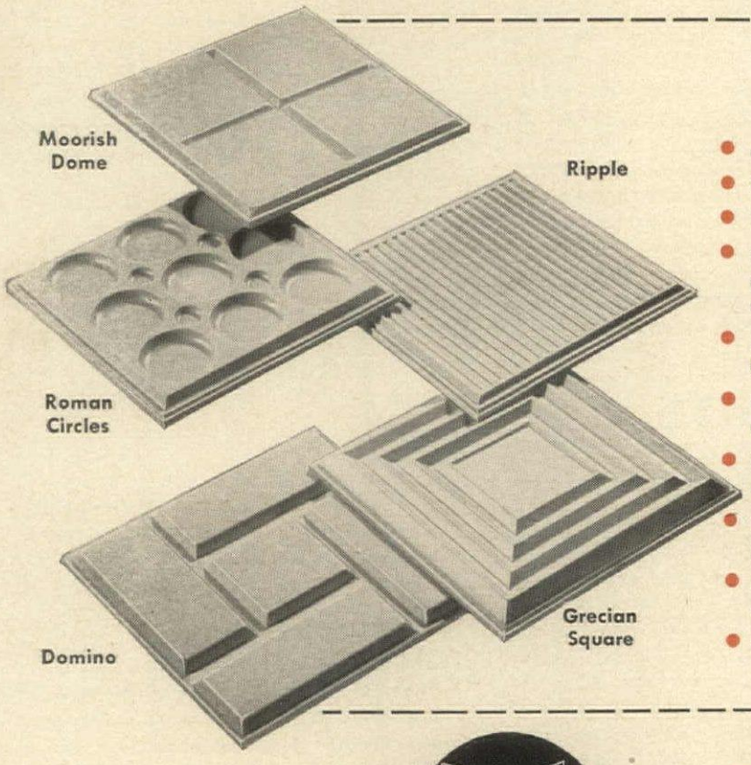
TRADE MARK TRADE MARK

panels for translucent ceilings

Two new, highly decorative answers to today's high-level illumination demands: Acousti-Celotex LUMICEL and ACOUSTI-LUX (Patents No. 2218992, 2710335)...for scientifically correct balance between peak light transmission and uniform light diffusion.

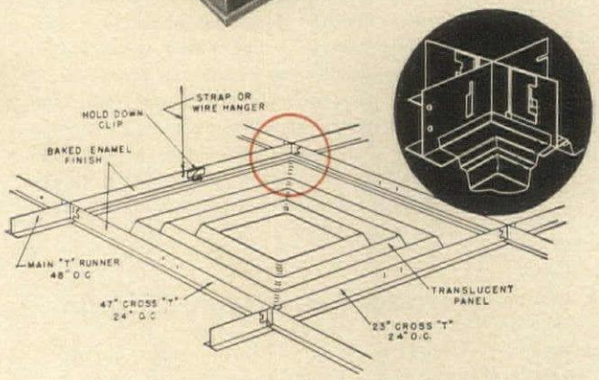
Installed on Alumitee metal suspension system, directly from the base ceiling, completely independent of light fixtures. May be used in combination with choice of attractive Acousti-Celotex sound conditioning tile in translucent ceiling designs, depending upon lighting, acoustical, and decorative requirements.

LUMICEL and ACOUSTI-LUX panels are now available at your Acousti-Celotex Distributor. Contact him now. See sample panels—get installation details!



DESIGNED TO HELP SOLVE Today's Illumination Problems with . . .

- complete uniform light diffusion—"shadowfree lighting"
- low brightness—no glare
- light sources from totally independent concealed fixtures
- will not support combustion; rated as "self-extinguishing" ceiling surface by the standard method Test for Flammability of Plastics as defined by ASTM D568-43
- long-lasting, durable panels with color and dimensional stability essential for translucent ceilings
- a ceiling system where acoustical tile and translucent panels are combined in a layout keyed to the needs of the areas below
- a single panel (Acousti-Lux) which combines light diffusion and sound absorption
- unusual versatility; unlimited custom designs and surface-painted color patterns available
- easy maintenance; convenient size for washing, instant removal for access to light fixtures
- an uninterrupted, level ceiling plane of soft, diffused light



Detail showing installation of Lumicel and Acousti-Lux translucent panels on Alumitee metal suspension system. System consists of rigid 24" x 24" suspended modular, interlocking grid fabricated of extruded aluminum. 1" exposed flanges of "T's" finished in white baked-on enamel. Mechanical hold-down device, easily disengaged for panel removal, keeps translucent panels securely fitted in grid.

FOR FULL DETAILS on Acousti-Celotex LUMICEL and ACOUSTI-LUX, write to The Celotex Corporation, Dept. A-105, 120 S. La Salle St., Chicago 3, Illinois.

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the American side, and liberal Italian Manufacturer and Planner Adriano Olivetti on the Italian.

Meeting June 20 to 30 at flowered Ischia, an island in the blue Bay of Naples, the discussion revealed a good deal about differences and similarities between the oldest of the Western countries and the youngest. Italian planning excelled in continuity and respect for traditional values, and in giving every architect training in community planning. US planning seemed to benefit from a broad base and from a developed habit of negotiation and assent before action, as compared to the European habit of fiat.

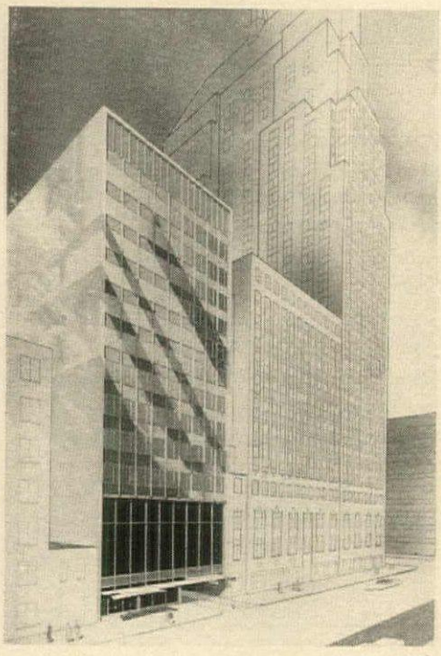
News to the Italians was the FHA insurance procedure to promote private financing of mass housing; they listened intently to HHFAdministrator Albert Cole's exposition. Disturbing to them was the thought that they may soon face the "roadtown" disorder already far advanced along corroding US highways. In closing, Olivetti delivered a thoughtful and moving address contrasting the dynamic collective values of US mobile civilization with the individualistic, settled habits of classicism.

More than one of the Americans carried back with him the question whether building and living in the US is not unduly upset, and deprived of its charm, by the hustle-bustle of traffic which attracts so many Americans for its own sake away from settled habits.

Resolutions jointly adopted represented a happy liberal version of planning aims that planners in both countries could well work with. Not stated but implied was a challenge to the dogmatism and rigidity of communism, which both oppose.

US delegates in addition to Stonorov, Gutheim and Cole were Edmund N. Bacon, director of the Philadelphia City Planning Commission; Lawrence K. Frank, New York anthropologist; Vernon DeMars of the School of Architecture, University of California; Douglas Haskell, editor, ARCHITECTURAL FORUM, Howard Menhinick, Regent Professor of City Planning, Georgia Institute of Technology; Paul Oppermann, director of the San Francisco City Plan Commission; C. Girard Davidson, former TVA and Bonneville Power Administration attorney, Portland, Ore.; Robert B. Mitchell, director of the Philadelphia Urban Traffic and Transportation Board.

Leading Italian participants besides Olivetti were Bruno Zevi, critic and editor of the magazine *L'Architettura;* Ernesto Rogers, editor of *Casabella;* Luigi Piccinato, professor of planning, Venice University, with two dozen others.



Oklahoma City office annex with glass-aluminum skin

Downtown Oklahoma City's biggest postwar building project, started this summer, is a $3 million 14-story addition for the First National Bank & Trust Co. building (see cut), and in back of that a $650,000 13-story parking garage with drive-in banking quarters for the bank in the basement. Although of modern design, sheathed in white marble and colored aluminum, the new building's floors will align and be connected with those of the old 32-story conventional limestone exterior office tower. Providing a natural separation above the fourth floor, however, is a setback in the older building that will be bridged well back from the building line in joining each floor. Architects and engineers: Sorey, Hill & Sorey of Oklahoma City.



L.A. police center installs glass instead of jail bars

Los Angeles opened its new $6.1 million air-conditioned Police Administration building last month. Construction features of the eight-story glass-and-ceramic-tile-covered building (see cut) included the use of precast concrete partitions in some sections (otherwise movable partitions wherever possible), unbreakable glass instead of bars or solid walls in parts of the jail areas (permitting easier supervision of prisoners with less personnel), and modern sculpture and glass mosaic mural decorations by Bernard Rosenthal and Joseph Young in the public lobby. Designers: Welton Becket & Associates and J. E. Stanton, associated architects.

SIDELIGHTS

Skyscrapers for Los Angeles?

Since 1925, new Los Angeles buildings have been limited to 13 stories no higher than 150'. Now the city council has voted in favor of a city charter amendment that would up the limit to 20 stories not exceeding 225' If given further approval after more study by the council's planning and charter and administrative code committees, the proposed amendment would be placed on the ballot in next spring's municipal election.

World turned upside down

Out of the swelling good-will tide that blossomed last summer came two unusual fruits last month. With State Dept. blessing, the arch anticommunist National Association of Home Builders invited a team of six Russian construction experts to attend its National Housing Center dedication in Washington this month, to be followed by a 12-city national tour to see how US homebuilders operate. In equally friendly fashion, the Kansas City Real Estate Board invited former President Truman to address its Constitution Day luncheon and receive a gavel of Monticello wood and USS Missouri steel. The gavel would be a gift from the National Association of Real Estate Boards, which in other years he used to attack as part of "the real estate lobby." Truman accepted, and at month's end was scheduled to speak on "The President's Responsibilities under the Constitution."

Hospital heliport

Lutheran Hospital in St. Louis planned the nation's first helicopter "ambli-port" on top of its five-story addition to be completed next month. Instead of a specially supported section of roof as first contemplated, it was decided last month at a conference of CAA, building department, airport and hospital officials to raise a 50' x 50' "landing field" platform 6' above the center of the roof, and construct a ramp so patients can be rolled directly from this platform to top-story operating rooms.

Invader tunnels into Chicago

Under a recent Illinois law, Chicago's aldermen lost their former contract letting power. When City Purchasing Agent John F. Ward let the first big construction contract under the new law in August dismay struck in some quarters. The award went to Peter Grafe, head of Los Angeles' Grafe-Callahan Construction Co., spearheading for a group of four companies whose $12,696,000 bid to dig 6 mi. of water intake tunnels

under Lake Michigan was $231,000 below the nearest competitor's. The award to the Californian, reported the *Daily News*, "upset a group of contractors who have had a corner on the Chicago market for 30 years."

Almost immediately "strange things began to happen," the paper added: the third low bidder, Stephen A. Healy, Chicago's biggest tunnel contractor ever since the days of the late Mayor Edward J. Kelly, protested that contract estimates of the volume of leakage that would have to be pumped from the tunnel during construction were erroneous, and if Grafe had calculated his expense for the proper volume, Healy would have been low bidder, instead of being $502,000 too high. At month's end Grafe had agreed to pump out all leakage in excess of the contract estimate for $100 less per unit than Healy's itemization, or at cost, if less. Said Purchasing Agent Ward: "This is one of the best contracts we've ever let in Chicago." Healy's attorney, however, filed suit to upset the Los Angeles invader's contract, "because I don't think the law provides for such riders."

NLRB supports Joint Board; threat of jurisdictional warfare wave eases

The construction industry's mechanism for preventing or settling work-assignment wrangles between building unions, the National Joint Board for the Settlement of Jurisdictional Disputes, emerged stronger than ever last month after a summer in which its prestige and authority were in serious doubt (FORUM, July '55, News).

In a key decision the National Labor Relations Board refused to take over the responsibility and reaffirmed that the joint board is the proper agency to handle building labor's jurisdictional disputes.

As an immediate effect of NLRB's refusal to get involved in the complicated work assignment claims of the construction crafts several big unions tempered their threats to withdraw from the board and there were hints that the powerful Electrical Workers' union and its employer counterpart, the National Electrical Contractors Assn., might return to the board after a three-year sulk.

The issue before the NLRB:

Last year an Arlington, Va., plastering contractor, A. W. Lee Co., hired three lathers to install aluminum hangers for an acoustical tile ceiling in a building for Westinghouse Air Brake Co. A carpenters' local claimed jurisdiction and, through its national offices, took the case to the joint board. The carpenters won, and the lathers were replaced with carpenters. But then the lathers struck other Lee jobs, attempting to force Lee to assign the work to them in contract form. By the time the case got to NLRB, the lathers had behind-the-scenes support from two big brothers, the plumbers' union and the plasterers' union, both critics of the joint board.

Last month NLRB decided, unanimously, that the dispute belonged squarely before the joint board, and that the lathers local was bound by the joint board's rulings, despite the local's contention that it had not been a party to the agreement setting up the joint board. NLRB's reasoning: the local's parent group, the lathers' international union, was a party to the joint board's procedures, had used the board often, and had over-all power to decide jurisdictional matters of its locals.

NLRB, doubtlessly shuddering at the thought of being swamped with thousands of jurisdictional arguments in an industry with which it had only slight familiarity, pointed out that the joint board was set up in recognition of the Taft-Hartley Act's encouragement of private settlement of interunion troubles. For it to decide on the merits of the Lee case, said NLRB, "would tend to discourage and render worthless the making of such agreements, contrary to the statutory purpose to encourage the voluntary adjustment of jurisdictional disputes. . . . We are without authority to determine this dispute."

This was the first time NLRB has confirmed its hands-off policy in jurisdictional wrangles in the building industry since the Eisenhower Administration took office and started appointing board members. NLRB hustled the Lee case along, so it could make a decision before Chairman Guy Farmer left office to return to private law practice.

Especially pleased by the NLRB's position was John T. Dunlop, neutral chairman of the joint board. Dunlop, an astute Harvard economics professor of flinty demeanor, has shrewdly avoided entrapment in the powerplays and politics of the building industry's unions. His purpose since he became the joint board's first chairman in 1948 has been to increase the group's effectiveness and prestige to make it indispensable as a peacekeeper among the building trades. This has been no small task, for the construction unions had defeated themselves in more than half a century of attempts to work out lasting procedures to settle jurisdictional wrangles.

*Bill Stapleton—*FORTUNE



DUNLOP

Last month Dunlop said the Lee decision "speaks for itself." Then, characteristically, he spoke for the decision: "It means that the NLRB recognizes the joint board and is not going to see it upset. It reaffirms NLRB's view that jurisdictional disputes are complicated problems and ought to be settled by the people closest to them."

Contractors picket associate for signing separate pact

A contractors' group in New Jersey used unusual measures last month in an effort to enforce employer solidarity in the face of divide-and-conquer tactics of striking carpenters. Adopting union methods, four contractors and the head of the Essex County Contractors' Assn. picketed a New York contractor renovating a Newark building when he avoided a shutdown by signing a separate contract with the carpenters.

The nonconforming contractor, Daniel J. Cronin, Inc., with some $3 million in building projects under way, was expelled from the county association after he signed up to give the carpenters their demands. Late last month (after the union had won a master contract for virtually all it had sought), the Cronin organization also faced the possibility of expulsion from the state contractor association.

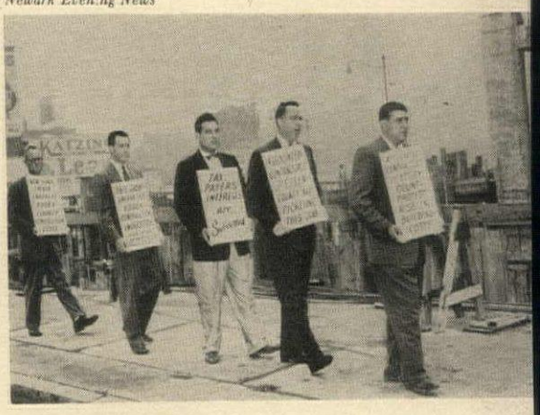
Background of the turnabout:

In July the Essex contractors started carpenter negotiations full of confidence that a settlement would be quick and reasonably painless. They had just signed with bricklayers and laborers for increases of only 10¢ an hour for a two-year period. Carpenters in two adjoining counties had signed at rates below the $3.50 an hour provided in last year's Essex contract.

There was shock and chagrin among the Essex contractors, however, when their 2,800 carpenters asked for a 45¢-an-hour package increase and rejected a 10¢-an-hour counteroffer. In early August the carpenters dropped their demands to 15¢ an hour the first year, another 15¢ the second, and announced that they would give contractors, individually, a choice of signing up or being struck.

Except for Cronin, the contractors stuck together through the ensuing strike for about six weeks. But then they all capitulated collectively, settled for a three-year contract with the two year-apart 15¢ increases, and about 15¢ more in welfare and pension benefits by the end of two years.

Newark Evening News



BEST-DRESSED PICKETS in Newark, N.J. carpenter strike were contractors vainly parading for brief period before project of member who yielded to union's demands. L. to r.: Henry D. Girolamo, William Waldron Jr., President John Lowe of Essex Contractors' Assn., William Salmond, Fred Blanchard.

for news about PEOPLE—*p. 29*



STAINLESS CURTAIN WALLS

give you the best "long pull" investment

"INFO" for Architects and Builders

1 "AL Structural Stainless Steels"—12 pages on stainless grades, properties, forms, finishes, standard "specs," uses and advantages.

2 "Stainless Steels for Store Fronts and Building Entrances"—40 pages of valuable data on examples and details. A1A File No. 26D.

3 "Stainless Steel Curtain Walls"—A 24-page progress report on methods. A1A File No. 15-H-1.

Write for Details

Address Dept. B-70

Curtain wall panels faced with Allegheny Metal have *all* the advantages. They can give your building the truly modern look. They have a soft, highly attractive luster and permit wide latitude in design for individual appearance. They're light and strong . . . can be used for sheathing or "face-lifting" operations on existing structures, as well as for any type or size of new commercial building or institution.

Compared to brick or masonry construction, stainless curtain walls present savings at every turn: in lighter foundations; in enlarged floor space; in fast all-weather erection; in reduced maintenance, easy cleaning and freedom from painting. And—*compared to any other curtain wall facing material*—stainless steel is the hardest, strongest and most resistant to smoke, fumes, weather, wear, etc. It is the one material that can best take a beating . . . that costs the least in the long run because it lasts the longest.

Our Engineering and Research Staffs, etc., are at your service—anywhere, anytime. ● Let us work with you. *Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pa.*

Make it BETTER-and LONGER LASTING

with Allegheny Metal

AL TIME-TESTED STAINLESS STEEL

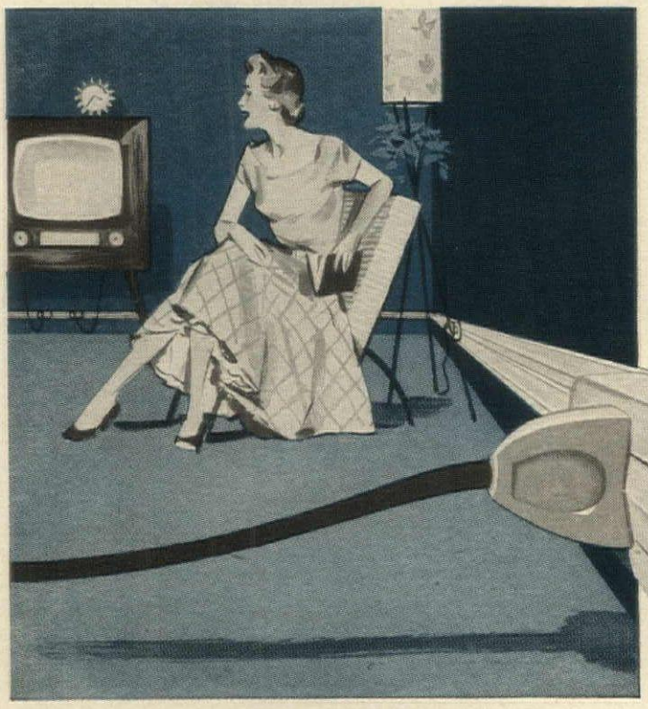
Warehouse stocks carried by all Ryerson steel plants

W&D 5208

PROFIT NOW FROM CONVENIENT, NEW

BULLDOG *Electrostrip*

PATENTED



It provides movable outlets... eliminates outlet planning!

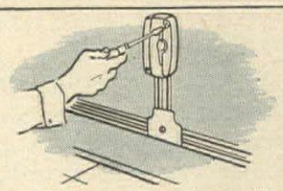
Here's the most advanced, most convenient electric outlet system ever devised—BullDog Electrostrip®. Receptacle plugs lock into the strip at any spot along its length—make it *every inch an outlet.* Electrostrip is neat, attractive . . . can be mounted easily on any surface . . . and is ideal both for new construction and for modernization.

SAVES INSTALLATION TIME, TOO!

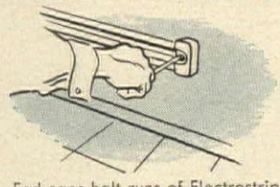
Electrostrip is installed easily and quickly . . . anywhere. Packaged in convenient roll form, it can be cut to any desired length.

Although rugged, it can be formed by hand to bend around corners and obstructions. Its ivory color blends with any color scheme.

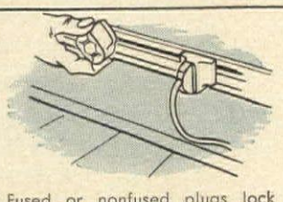
The feed-in device can be used as either an end or a center feed. Electrostrip is perfect for homes, hotels, offices, stores, institutions.



For modernization, the feed-in device can be connected to existing wall outlets. No replastering or "wire-fishing" is necessary.



End caps halt runs of Electrostrip wherever desired. Absolutely safe, the strip is rated at 20 amps, 125 volts. It is listed by Underwriters'.



Fused or nonfused plugs lock into the strip anywhere along its length . . . eliminate extension cords and over-loaded outlets.

Electrostrip is sold *only* by BullDog distributors, *only* to electrical contractors. See your BullDog field engineer, or write BullDog Electric Products Co., Detroit 32, Mich. Free promotion material available.

IF IT'S NEW . . . IF IT'S DIFFERENT . . . IF IT'S BETTER . . . IT'S

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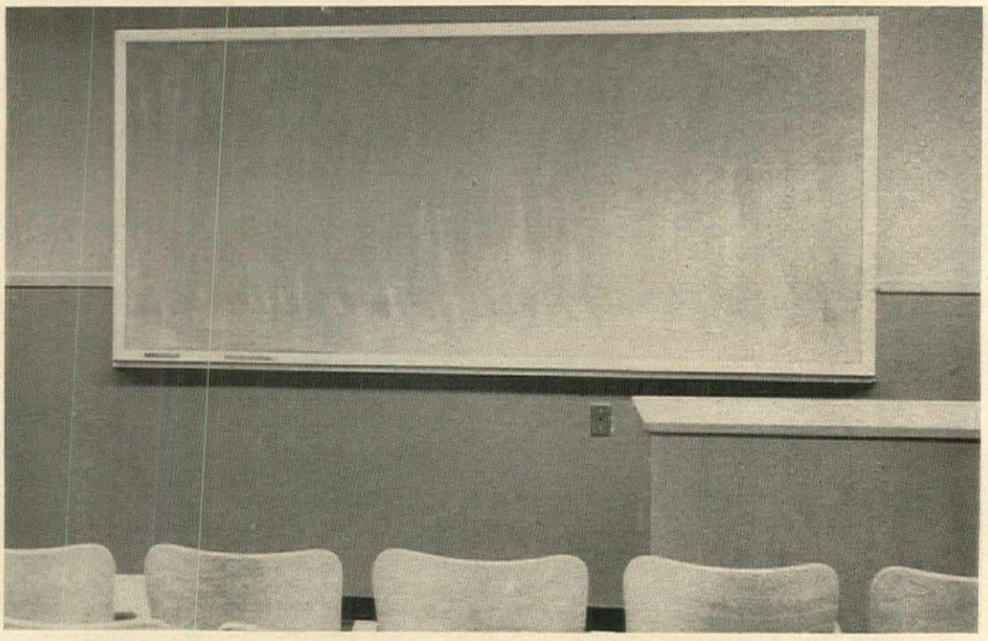
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GOTHAM

proudly introduces **3** major products designed to make chalkboard history... in **1956**

Gotham "Ready-Framed" chalkboard in lecture room of University Medical School, Jackson, Miss.
Architects: Malvaney, Naef & Overstreet, Jackson, Miss.
General Contractor: Farnsworth & Chambers Co., New Orleans, La.



THE NEW, BUDGET-PRICED "READY-FRAMED" CHALKBOARDS AND CORKBOARDS – Here, at last, are chalkboards and corkboards which combine the ease of installation, flexibility of design and economy of cost that architects and school authorities have repeatedly asked for.

Our formula is simple: We have applied the principles of prefabrication to the manufacture and installation of chalkboard. "Ready-Framed" boards are manufactured on a modern production line basis and are delivered to the building site completely assembled for quick and economical installation.

No special skills or equipment are required to assure ease and uniformity of installation–thus eliminating complications and saving money.

And remember this: Gotham "Ready-Framed" boards permit the widest possible choice of trim, cork and chalkboard...

VITREO-STEEL CHALKBOARD – THE ECONOMY PORCELAIN-STEEL CHALKBOARD–Vitreo-Steel Chalkboard is a porcelain-enamel, life-time finish, steel board which costs less than slate and glass and is in the same price range as better types of composition chalkboards. It has all the many superior functional features which make the porcelain-steel chalkboard such a sound investment – improved porcelain writing surface, durability as well as ease of installation and maintenance...

COLORBOARD – The Distinctive Chalkboard of Today For the Distinctive School of Tomorrow – Gotham's superior line of composition chalkboards is now available in a harmonious, inspiring rainbow of colors – greens, blues, browns, greys, black and yellow. Samples of eye-easing, eye-pleasing Colorboard will be forwarded upon request. Colorboard's luxury and beauty can be seen, too, in the exact color reproductions contained in our 1956 catalog. The point to remember is that Colorboard can be yours for the cost of an ordinary chalkboard – the price is as appealing as the color. **For a full description of Gotham's extensive line write for our 1956 Sweet's Catalog.**

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PEOPLE

Meistrell given No. 2 post in HHFA; George L. Ramsey heads Chicago building dept.; Powell's contempt sentence reversed

A year ago **William F. McKenna** returned to his Los Angeles law practice after directing the early phases of the FHA probes.



MEISTRELL

Last month HHFAdministrator **Albert M. Cole** filled the vacancy by naming **Frank J. Meistrell,** 52-year-old New York lawyer, deputy HHFAdministrator. The Agency's new $15,000-a-year No. 2 man has been FHA's general counsel since Aug. '54, heading up efforts to recapture mortgaging-out windfalls from 608 sponsors. In his new job he will concentrate on meshing urban renewal with the work of FHA, PHA and other subordinate HHFA agencies.

Other Washington agency personnel developments: **Arnold E. Chase,** 45, an aide since 1952 in the office of **Franklin G. Floete,** assistant defense secretary for installations, was appointed to succeed **Hersey E. "Pat" Riley** as chief of BLS' construction division, of which he was assistant chief from 1946 to 1949. Riley moved over to become deputy chief to BLS' prices and cost of living division, which he is expected to head in a few more months. FHA Commissioner **Norman P. Mason** appointed **Bruce C. Kixmiller Jr.,** 37, to the new post of special assistant for Armed Services housing. **Clyde L. Powell,** former assistant FHA commissioner for rental housing, who resigned about the time the FHA probes began, was cleared of a contempt conviction by the US Court of Appeals for the District of Columbia. Last October Federal Judge F. Dickinson Letts sentenced Powell to a year in jail for refusing to answer questions before a grand jury investigating the 608 program Meistrell directed. But the three-judge appeals court ruled that Justice Dept. prosecutors had "misled" Judge Letts with "grossly inaccurate" information and that Powell's conviction was "contrary to the evidence."

In what some observers said was "being kicked upstairs," Chicago's aggressive holdover Acting Building Commissioner **Richard Smykal** was appointed last month as the $15,000 head of the city's new Community Conservation Board. Smykal vigorously pushed many salutory departmental reforms and new slum cleanup procedures (AF, April '55) after his appointment in April '54 by former Mayor **Martin H. Kennelly.** But he incurred the displeasure of the AFL Building Trades Council in a wrangle over intensified slum inspection work by his electrical inspectors, all members of the electrical workers local. The Illinois Association of Architects also filed a suit challenging his right to the $20,000 commissioner's salary he received while acting commissioner. Smykal was not a registered architect, a statutory requirement for the commissionership, but during his tenure that post was always vacant. Despite widespread acclaim for his accomplishment, it was an open question how long Smykal would continue in charge of the buildings department after the election of Mayor Richard J. Daley last April.

Last month Daley answered the question: he moved out Smykal and moved in Architect **George L. Ramsey,** 52, as building commissioner. A veteran public agency architect, Ramsey was assistant Cook County architect for 19 years, and from 1945 to 1952 was the county's assistant superintendent of maintenance and operation. He also conducted a private practice, which included planning and supervision of construction of the Chicago Stadium. Since July he had been employed in the building department as supervising architect and director of construction. Ramsey's record is "good, though unexceptional," said a *Daily News* editorial that also reviewed Smykal's effective work, said the department's loss of the latter's services "is to be deplored."



RAMSEY

NAMED: **Martin Meyerson,** on leave from Pennsylvania University's department of city planning and research institute for urban studies, and widely experienced as a public and private housing planner in Chicago and Philadelphia, as executive director of the American Council to Improve our Neighborhoods (ACTION): **Z. A. Marsh,** director of school activities for Minneapolis-Honeywell Regulator Co., as head of the Joint Committee of Industry and Education on school facilities, a 100-man group formed to promote functional building materials for schools and adequate classroom heating, lighting.

After apprentice plumbers **Thomas J. Tobin, Jr.,** of Philadelphia, and **Jack F. Goold,** of Aurora, Col., had won top honors a month ago at the annual apprenticeship contest sponsored at Purdue University by the United Association of Plumbers and Pipefitters, **Martin P. Durkin,** the union's president, announced that he was expanding and strengthening apprentice and journeyman training in the techniques necessary for plumbers and pipefitters working on the expected building boom in private atomic reactors and power plants.

"It is of enormous importance always to have the room full." So spoke New York Realtor and Theater Expert **Robert W. Dowling** last month in suggesting an "accordion plan" civic auditorium for Washington that could be set up to seat 4,000 one night, perhaps only 1,000 without any vacant seats at another event the next night. "This plan is entirely practical," he added. "It could be accomplished by movable walls that could be raised from the floor or suspended from ceiling tracks."

F. Roy Kemp



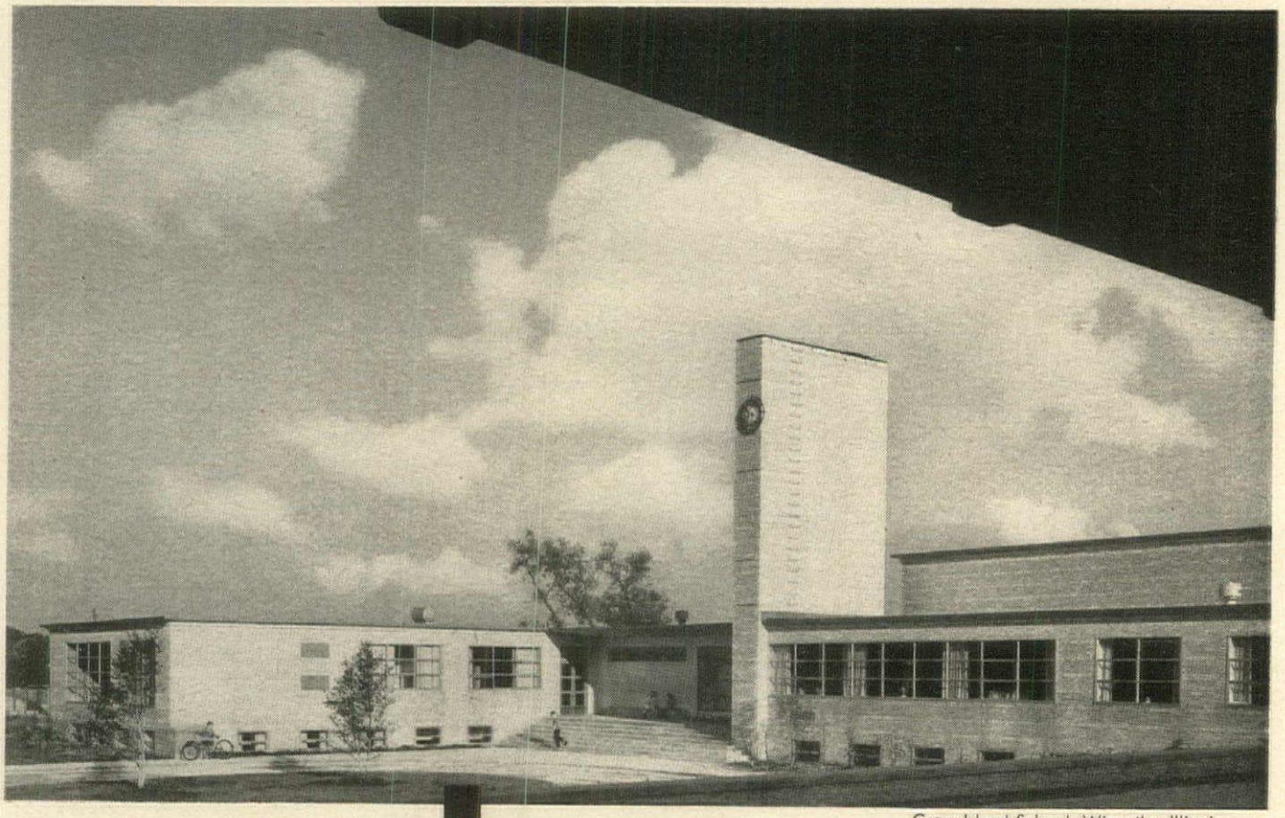
DOWLING

What lent weight to Dowling's ideas concerning the proposed auditorium, which would also be used for presidential inaugurations, was his designation as one of Speaker Rayburn's seven appointees to a Congressional commission to draft plans for it by February. (Vice President Nixon also has appointed seven members, and President Eisenhower is expected to name a third seven shortly.) Dowling thought an appropriate building might cost about $15 million. He said it would be a mistake to incorporate a convention hall in it, but it should be kept for the "field of culture and artistic achievement." He predicted that the necessary funds could be raised readily by public subscription and foundation gifts. Last summer, he pointed out, he had no great difficulty in quickly raising $400,000 to cover the costs of the American Festival of Arts in France under State Dept. sponsorship.

DIED: Sculptor **Carl Milles,** 80, noted for his public fountains and monuments, including many works in the US, Sept. 19, in Lidingoe, Sweden. For many years Milles was a visiting instructor at Cranbrook Academy in Bloomfield Hills, Mich., where he worked closely with the late Eliel Saarinen and many other architects. More recently he did a sculpture setting for Eero Saarinen's Des Moines Art Center; other works in this country including his famous "Fountain of Faith" in a Falls Church, Va. cemetery, a peace monument for St. Paul's City Hall. OTHER DEATHS: **Edward B. Silverman,** 60, member of Smith & Silverman, consulting electrical engineers who designed electrical installations for Lever House and Rockefeller Center, Aug. 29, in New York; **George C. Clarke,** 85, engineer in charge of construction of New York's Pennsylvania Station, Sept. 5, in New York; **Richard F. Harding,** 55, secretary-manager of the San Francisco Real Estate Board, former president of NAREB's Secretaries Council, Sept. 9 in San Francisco.

for news about TRENDS—*p. 32*

How a school met expansion problems

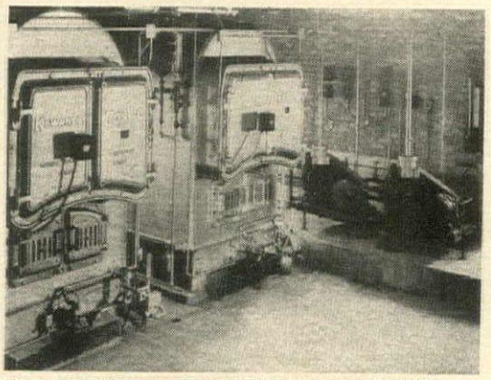


Crow Island School, Winnetka, Illinois
Architects: Eero Saarinen and Perkins & Will

KEWANEE reserve plus rated boilers...

solved future heating needs

One of the urgent problems facing schools today is providing for expansion. Take heating. Added classrooms plus constantly growing enrollment mean boilers should be sized to meet future heating demands. The costly alternative is to provide just enough power initially—then add boilers when expansion creates an emergency. An example of architect foresight is the case of the Crow Island School, Winnetka, Illinois. When it was built fifteen years ago, architects Eero Saarinen and Perkins & Will chose Kewanee Reserve Plus Rated Boilers because they provide sufficient reserve for future needs. Prominent editors, architects and school officials recently completed an examination of equipment used in the school. Their findings showed Kewanee Boilers are "in excellent condition"—meet today's heavier demands—there is no need for additional boilers despite expansion which added 12,779 sq. ft. of new building to house an increased student body. So choose KEWANEE—be prepared for expansion when it comes.

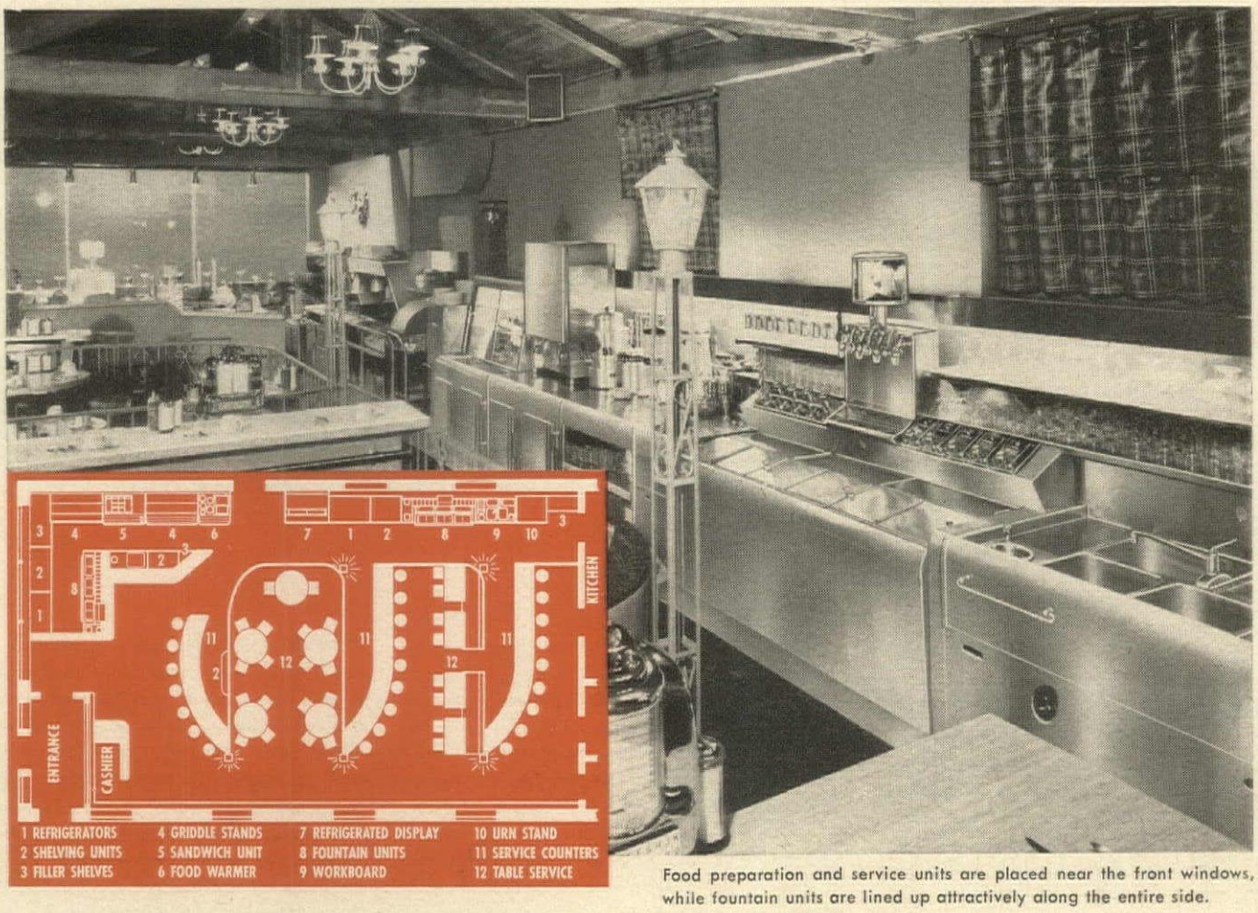


Here are 2 Kewanee Type "C" Boilers installed 15 years ago in the Crow Island School—adequately serving today.

KEWANEE-ROSS CORPORATION KEWANEE, ILLINOIS
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KEWANEE ROSS

Serving home or industry American-Standard • American Blower • Church Seats & Wall Tile • Detroit Controls • Kewanee Boilers • Ross Exchangers • Sunbeam Air Conditioners



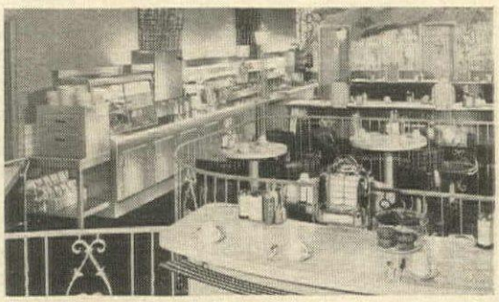
Food preparation and service units are placed near the front windows, while fountain units are lined up attractively along the entire side.

Novel Floor Plan and Latest Equipment Speed Service at Plantation House

At Plantation House, in the Evanston-Chicago business district, wrought iron grillwork suggests the Deep South, and the menu names waffles, sandwiches, sodas and sundaes that carry out the plantation idea. The curved, off-the-floor counters and groups of tables create an informal atmosphere in which the preparation of food in customer-view seems entirely appropriate.

The plan and the equipment—all by Bastian-Blessing—work together to promote fast service, which is important because this is also a drive-in restaurant. A side door opens onto a large parking lot with car-hops in attendance in mild weather. One of the two Fast-Serv fountain units is adjacent to this door.

Altogether, Mr. Irwin Benjamin, the proprietor, has built an establishment offering many interesting ideas. For expert help in developing your ideas into profitable reality, take advantage of the planning service offered by the distributor near you, or write The Bastian-Blessing Co., 4205 W. Peterson Ave., Chicago 30, Ill.



Customers are pleased with good food and speedy service at convenient counters and tables in a pleasant southern atmosphere.



Traffic is attracted by the wide variety of tempting dishes being prepared at these griddle stands and food service units visible from the street.

BASTIAN-BLESSING

Qualified Sales and Service Outlets in All Principal Cities

WORLD'S LARGEST MANUFACTURER OF SODA FOUNTAINS AND COUNTER FOOD SERVICE EQUIPMENT

TRENDS

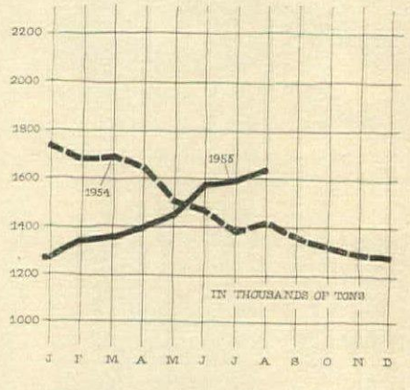
Structural steel orders set monthly record; marked uptrend in materials prices continues; spending hits another peak

There is no rose without its thorns, and probably never a building boom without its attendant problems.

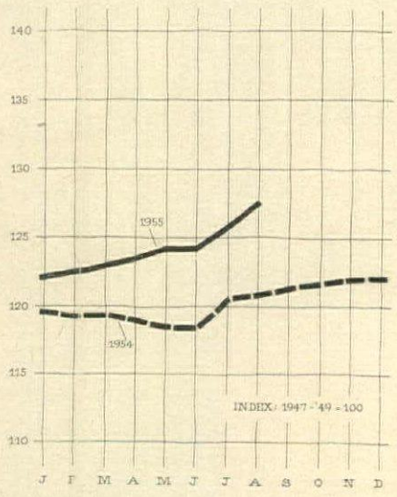
As the postwar or new "economic break-through" construction boom rose to new heights last month, it was accompanied not only by conventional material and building cost increases (see charts), but also faced special shortages in three of its principal metals—aluminum, copper and steel—aggravated partly by hurricane-flood and partly by strike effects (p. 13).

Structural steel orders in July were the largest in any month on record, pushed the backlog of unfilled orders up to 1,638,000 tons (see chart). Structural contracts for the first seven months of the year, 2,019,000 tons, or 34% over Jan. to July '54, were the greatest for any similar period except in 1929.

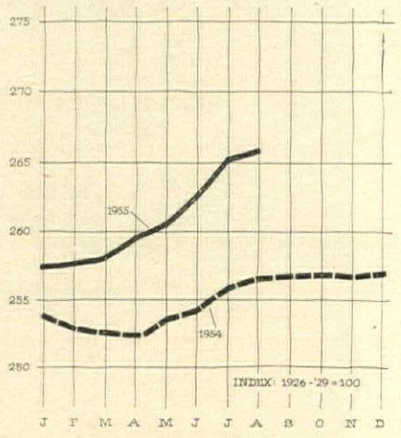
Cheerful news continued for architects, builders, labor and other materials producers in the latest statistics on construction expenditures. Successive new records in July and August almost reached $4 billion a month, or $1 billion a week. The Federal Reserve Board said 2,542,000 workers were employed in contract construction in July. Stimulated largely by construction activity, employment in stone, clay and glass manufacturing industries numbered 552,000, 8% more than a year earlier; fabricated metal industry workers totaled 1,117,000, a 7% gain; lumber industry workers were 770,000, but the 21% increase in this field partly reflected reduced employment in July '54 because of work stoppages then.



STRUCTURAL STEEL: Unfilled orders on Aug. 1 rose to 1,638,000 tons, of which 1,008,000 tons were available for fabrication through November. New structural orders in July totaled 366,853 tons, the highest in any month on record, according to the American Institute of Steel Construction. Shipments, however, still lagged 13% behind last year's: were 217,000 tons for July, 1,632,000 tons for 1955's first seven months. Seven months average, 1947 to 1950: 1,286,000 tons.



BUILDING MATERIALS PRICES jumped from an index of 125.7 in July to 127.4 in August on the basis of average wholesale figures compiled by BLS. This was a gain of 1.4% in one month. It put this index 5.5% ahead of Aug. '54, with close to half of this increase occurring this July and August. Lumber rose 1% in August over July, plumbing equipment 4%, heating equipment 1.7%.

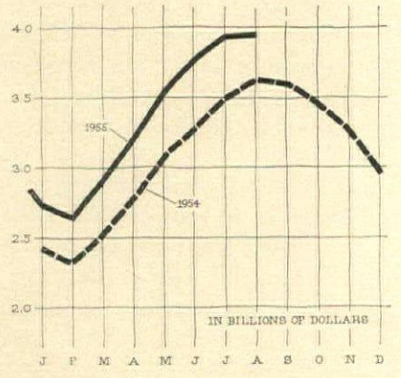


BUILDING COSTS for nonresidential structures rose less severely from July to August than in any month since they started their sharp climb last March, on E. H. Boeckh & Associates' national index. The August figure was 265.8, only 0.6 points above July, but 7.8 points, or 3%, above March. The Dow Service found that costs in the metropolitan New York and New Jersey area rose only 1% in the six months since March, but 3% in New England, 9% in Detroit, 8% in Indianapolis, 7% in Akron.

August outlays set another record, but miss $4 billion

(millions of dollars)	Aug. '55	First eight months 1955	1954	%±
PRIVATE BUILDING				
Residential (nonfarm)	1,492	10,514	8,297	+27
Nonresidential*	683	4,785	4,022	+19
Industrial	199	1,510	1,336	+13
Commercial	286	1,864	1 405	+33
Offices; lofts; warehouses	96	701	604	+16
Stores; restaurants; garages	190	1,163	801	+45
Religious	69	470	360	+31
Educational	43	322	337	—4
Hospital; institutions	31	234	220	+6
Public utilities	425	2,901	2,793	+4
*PRIVATE TOTAL.	2,764	19,291	16,267	+19
PUBLIC BUILDING				
Residential	19	173	245	—29
Nonresidential	397	2,944	3,124	—6
Industrial	60	579	1 089	—47
Educational	230	1,640	1,378	+19
Hospital; institutions	32	236	248	—5
Military	128	821	648	+27
Highways	460	2,420	2,335	+4
Sewer; water	103	721	643	+12
*PUBLIC TOTAL ..	1,214	7,760	7,712	+1
*GRAND TOTAL ..	3,978	27,051	23,979	+13

* Minor components not shown, so total exceeds sum of parts.



TOTAL CONSTRUCTION expenditures reached $3,978 million in August, still short of $4 billion but a 1% increase over the previous all-time monthly record set in July ($3,956 million), according to the Commerce and Labor Depts. After dipping slightly in June and July, housing starts turned up again contraseasonally in August when they rose to 123,000. Seasonally adjusted, this was at an annual rate of 1,304,000. Through August starts totaled 927,900, for the year now seemed sure to pass 1.3 million. August outlays for stores and similar mercantile establishments, $190 million, were 56% greater than Aug. '54 outlays. For eight months they were 45% ahead of last year.

in the wake of a junior tornado!

Havoc reigns when Junior takes a bath! But, as informed architects and builders know, Pomona's "Space-Rite" Perma-glaze deck tile is impervious not only to Junior's hard, scratchy toys and the dirt and grime of his day's foraging—but also to soapy water and even corrosive chemicals, harmful to ordinary surfaces!

That's because only Pomona's exclusive fusing process produces this beautiful pebbled finish of flint-rock hardness.

Uniform joints are assured through Pomona's "Space-Rite" feature. Shown here, exquisite new Mercedes Blue in Perma-glaze 6″ x 6″ deck tile.

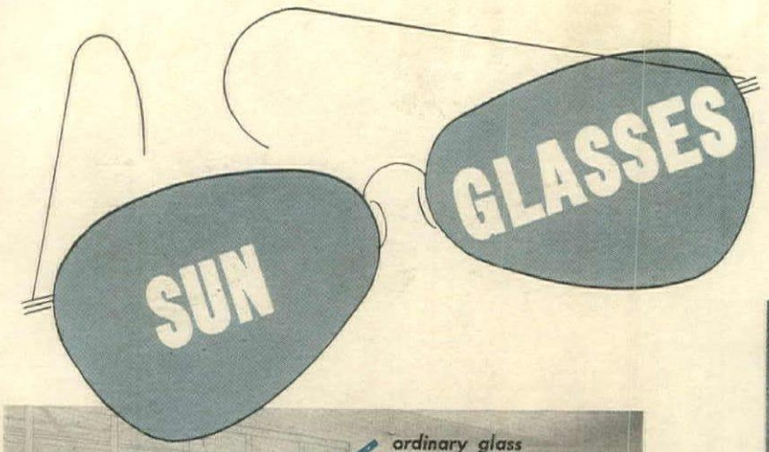
Write for free catalog with actual tile samples of full line of colors.

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Seattle • San Francisco • Pomona • Long Beach • Arkansas City, Kan. • Houston • St. Louis
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POMONA TILE





on BUILDINGS?

Yes...with

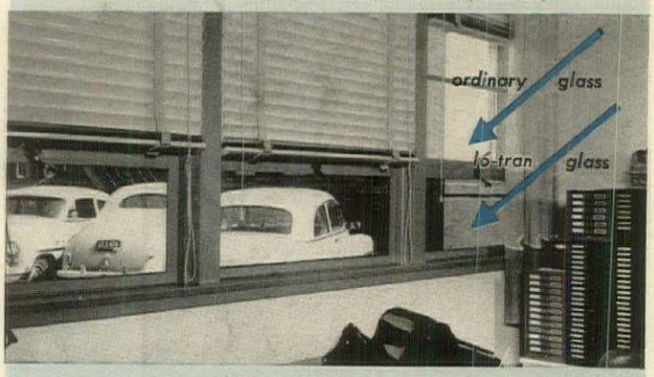
HOUZE Lo-tran (12.5) GLASS

Glare-Proof CLASSROOMS, OFFICES, SHOPS, SKYLIGHTS

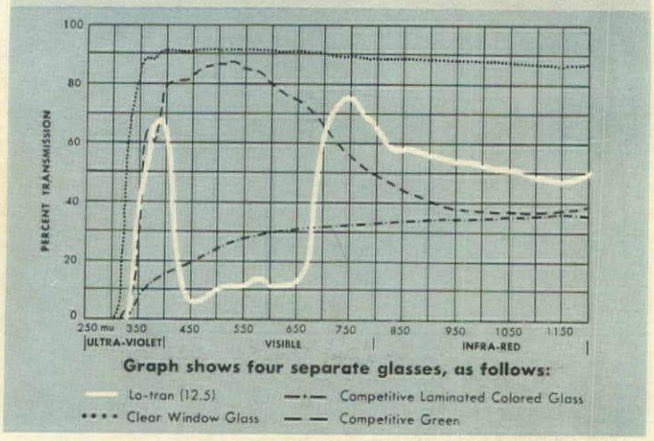


A three-pane strip of Lo-Tran at Cortez School, Covina, Calif., eliminates glare, permits students to face windows, and provides unrestricted outside viewing. Note the glare through the opened clear glass upper windows.

(Architect: H. L. Gogerty, F.A.I.A.D., Stewart Kerr, Associate)



Houze Lo-Tran vision strips in window completely eliminate glare which exists through clear glass window where arrow is pointing. Bright sunshine has completely "washed out" the red brick visible through the Houze view strips.



(Note)—Lo-Tran gives even transmission throughout the visible range of the spectrum (see chart) so that colors viewed through this glass are free of color distortion.

Now, new or existing buildings—in all parts of the country—can have glare-eliminating window glass.

Houze Lo-Tran, the ideal "see-out" glass, cancels "see-in" characteristics to almost zero. Lo-Tran was developed specifically to meet the "brightness balance" recommendations of the National Council on Schoolhouse Construction and many of the nation's outstanding illuminating engineers and school architects.

Produced in standard 38" or 42" x 60" sheets, Houze Lo-Tran Glass is easy to install—like ordinary window glass—requiring no special sash or sealant.

This amazing "Balanced Brightness" glass is AVAILABLE NOW through local dealers and distributors.

Why not put "Sun-Glasses" on your next building project with Houze Lo-Tran (12.5) Glass?



no color distortion

houze glass corporation

point marion, pennsylvania

OLDEST AND LARGEST MANUFACTURER OF SUN GLASS LENSES

Write:

today for this 8-page catalog . . . it contains the technical information you want!





Take a tip from the guy who knows:

Elementary School Gymnasium, Perrysburg, Ohio.
Architect, Britsch & Munger, Toledo, Ohio

FOR SCHOOL FLOORS

THAT LAST A LIFETIME,

Specify **KREOLITE!**

For nearly 50 years, Kreolite Wood Block Floors have been used successfully in industrial plant areas where heavy traffic would ruin normal floors.

Now, Kreolite offers this famous durability in its beautiful Flexible Strip End Grain Wood Block Flooring, designed specifically for school activities centers like gymnasiums, vocational shops and laboratories.

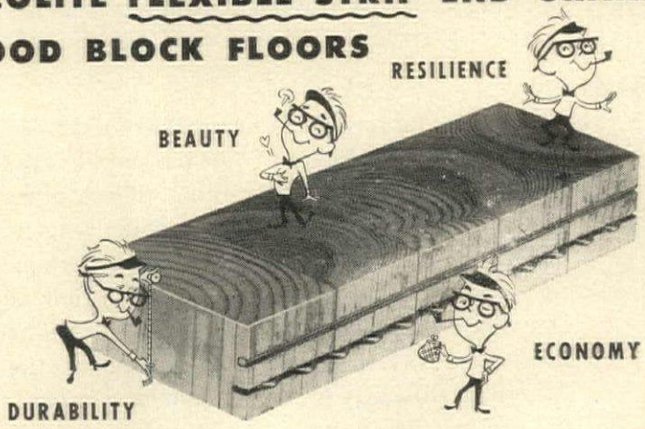
Made from 1-1/2" or 2" thick kiln-dried southern yellow pine, individual blocks of Kreolite are wire-trussed together to form compact monolithic-like end grain planks or strips. These strips are then impregnated with a special preservative to guard them against the ravages of time.

When the flooring is laid, each Kreolite strip is interlocked to adjoining strips by a patented steel wire spline—providing a smooth, resilient floor that defies hard usage! For complete details, fill out the coupon below.

The Jennison-Wright Corp.

2463 Broadway
Toledo 9, Ohio

KREOLITE FLEXIBLE STRIP END GRAIN WOOD BLOCK FLOORS



Please send me a free sample and complete specifications of Kreolite Flexible Strip End Grain Wood Block Flooring.

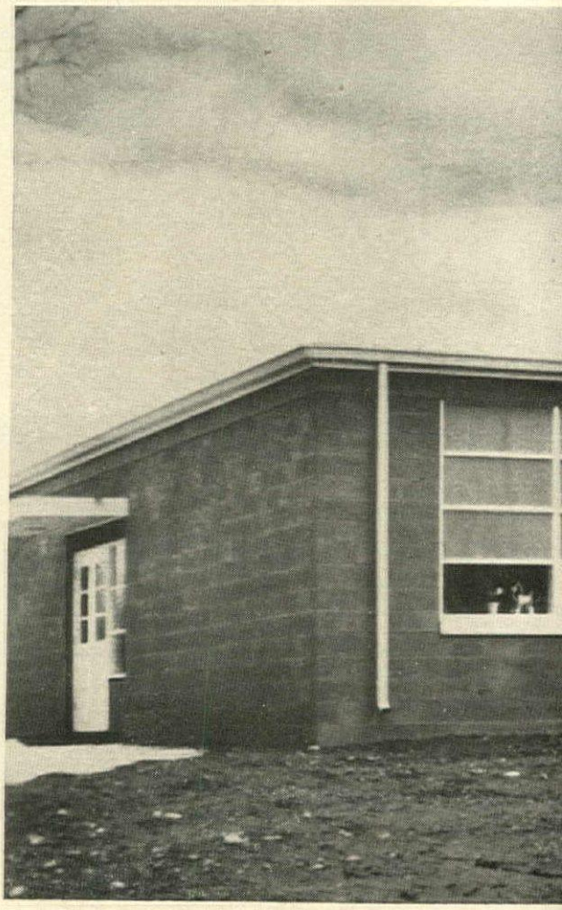
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Address_____

City_____ State_____

F

Wisconsin School builds 5 modern



GILSULATE® for hot underground pipe insulation helps keep costs low

"The installation of this material is so simple that it is almost unbelievable."

E. F. Klingler & Associates, Eau Claire, Wis.

Recent surveys of schoolroom needs estimate construction costs at well over $30,000 *per classroom*, exclusive of land costs. Yet at Cadott School, Cadott, Wisconsin, E. F. Klingler & Associates successfully completed a modern 5-*classroom* addition for only a little over $54,000! Each classroom accommodates 30 pupils and measures 23′ x 31′ x 10′... and 100% union labor was used on the job.

The outstanding design and construction features of this unique job are discussed in *Weather Magic*, a publication of The Trane Company, La Crosse, Wisconsin, (Vol. 18, No. 5, Jan. 1955). Here, from this article, is what E. F. Klingler & Associates say about the insulation used at Cadott School:

"**The steam and return mains are standard black steel pipe, run about six inches *outside* the foundation lines of the building. These pipes are supported by laying them on short lengths of 1¼ inch pipe which were set into the foundation walls at right angles to the foundation, at elevations to get proper pitch to the lines. The insulation material used is a product of the American Gilsonite Company, and is an asphaltic ore marketed under the trade name of GILSULATE. The material resembles pulverized coal in appearance. The installation of this material is so simple that it is almost unbelievable. We merely backfilled the foundations with earth fill up to a point about four inches below the bottom surface of the steam-lines, poured in all the GILSULATE to a depth to afford four inches cover on all sides of the pipes, tamped it thoroughly, and covered it over with earth. At the highest point in the lines there are six inches of earth cover over the insulation and at the low point, about two feet. This material is completely impervious to water and is effective enough as an insulation so that at no time during the last winter was the heat loss great enough to melt the snow directly above the pipes, or for that matter, even thaw out the earth cover.**"

No other method for insulating and protecting hot underground pipes can match this performance—*Triple-Zone* GILSULATE *shows the lowest installed cost providing efficiency and permanence.*

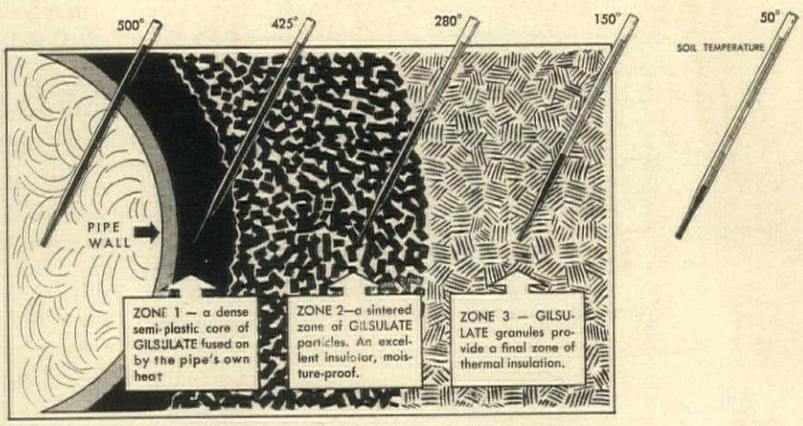
Investigate the value of easily installed, low-cost GILSULATE. Use the coupon for complete information, or see your local GILSULATE distributor.

classrooms for less than $55,000



FACTS ABOUT GILSULATE

1. **Easy to use**...just pour and tamp... pipe heat does the rest.
2. **Forms 3 zones** of protection against heat loss and all hazards commonly encountered by hot buried pipes.
3. **Needs no housing or mechanical sheaths:** no mixing, special handling or equipment.
4. **Only needs normal pipe spacing:** for multiple pipe or cramped conditions.
5. **Three types available:**
   Type A for 220°-310° F. temp. range
   Type B for 300°-385° F. temp. range
   Type C for 385°-520° F. temp. range



THE TRIPLE-ZONE INSULATION FOR LIFETIME PROTECTION OF HOT UNDERGROUND PIPES

GILSULATE®

AMERICAN GILSONITE COMPANY, SALT LAKE CITY 1, UTAH
Affiliate of Barber Oil Corp. & Standard Oil Co. of California

AF

AMERICAN GILSONITE COMPANY

134 West Broadway
Salt Lake City 1, Utah

or

1145 East Jersey St.
Elizabeth 4, N. J.

Send me more information on GILSULATE Insulation

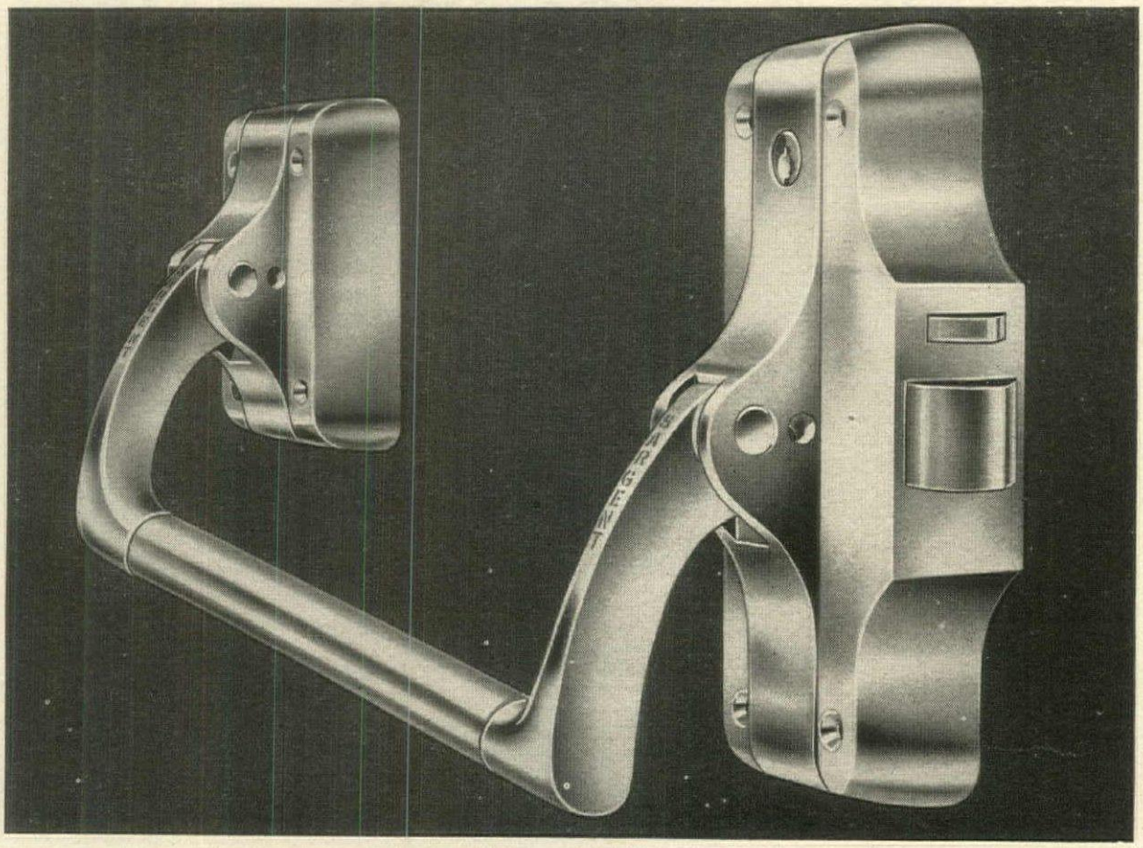
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TITLE.....

COMPANY.....

ADDRESS.....

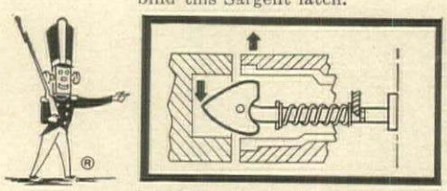
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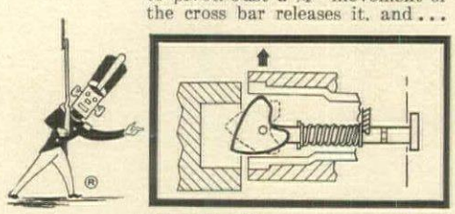
It cannot jam!

—either opening or closing

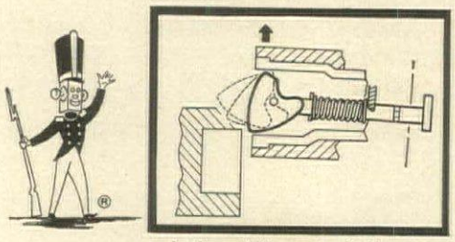
Outward pressure on a door *can't* bind this Sargent latch.



Look at the way the latch is built to pivot. Just a ¼" movement of the cross bar releases it, and . . .



the latch *rolls* . . .



and then *folds* out of the way. Pressure actually helps to open it.

The function of a panic device is to *prevent* panic! To open doors *instantly* and *easily* in every emergency.

So, when human lives are at stake . . . specify the *safest*. Sargent Quick Exit Devices.

The diagrams will show you *why*.

Study them. You'll see *why* they cannot jam. *Why* the Sargent latch does not have to be retracted by the bar. The slightest bar movement releases the locking mechanism, making the latch bolt free-floating. This same easy, roll-fold action works in reverse to *close* doors smoothly, too. (Contrast this with devices that require *complete* movement of the latch by crossbar . . . latch bolts that may bind when pressure forces the bolt against the strike.)

Here's another plus . . . *stainless steel* is used for crossbar bearings, latch bolt pins and springs to give your clients *lasting* protection.

These exit devices come in Rim, Vertical Rod and Mortise Types. With or without mullions and thresholds. And all three types of bolts harmonize when used together . . . and with other Sargent hardware . . . in the same building.

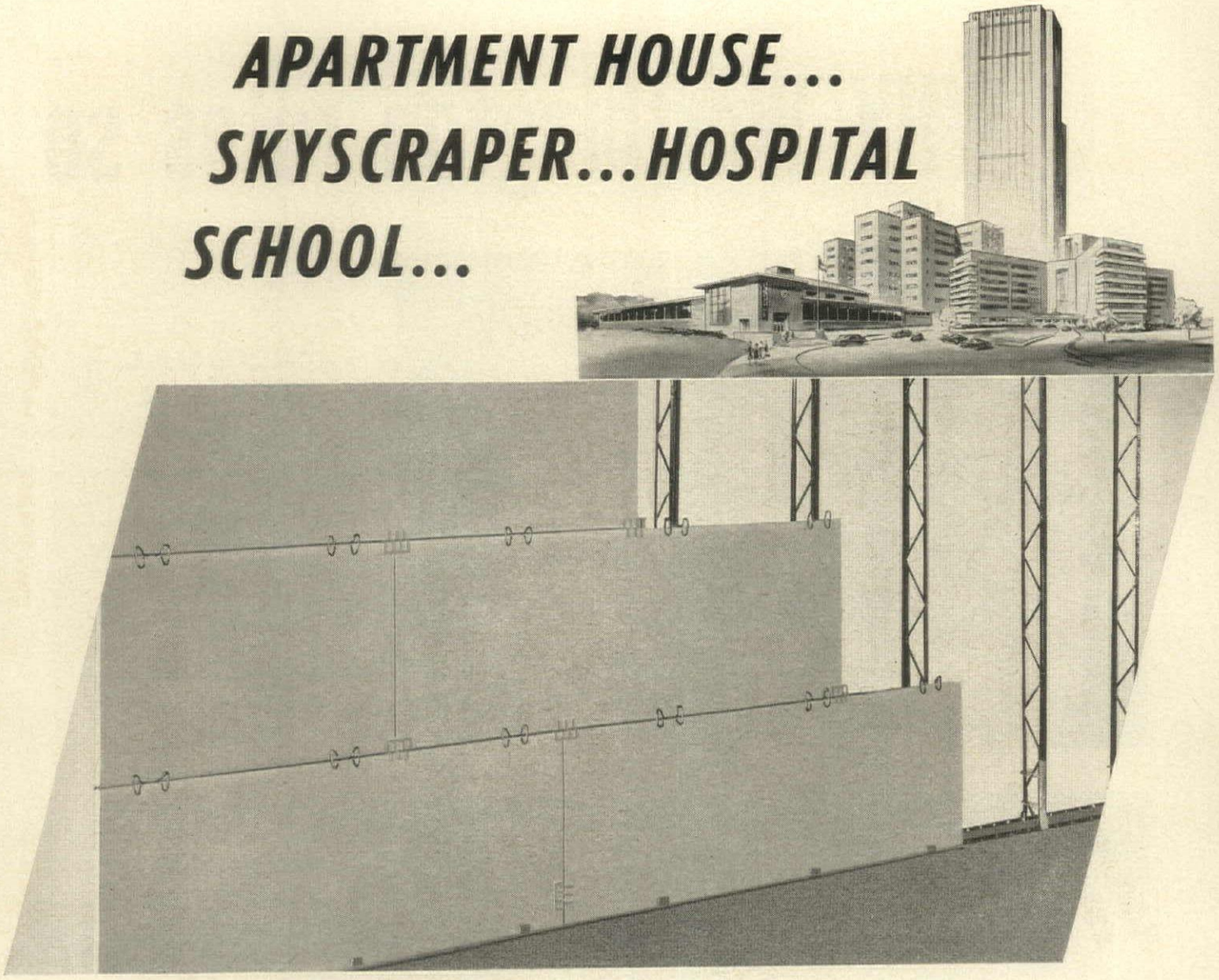
Play it *safe* . . . with Sargent Quick Exit Bolts. Write for full details. Dept. 8K

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New Gold Bond HOLOSTUD Wall System benefits them all!

Amazing versatility! That's what the new Gold Bond Holostud Wall System offers to all types of building designs. Whether it's to be a hospital, office building, apartment house or school, this efficient new wall system provides strong, rigid, non-load bearing partitions with many added benefits: *Effective Sound Resistance*...so important in hospitals and schools; *Simplified Utility Routing*... made possible by the open web design of Holostud; *Fast Erection*... component parts are strong, but lightweight; *Lower Maintenance Costs* with easier access to utilities... particularly important in hotels and apartment houses; *Excellent Fire Protection*... that only lath and plaster can provide.

Prefabricated Holostuds are adaptable to either metal lath or to gypsum lath construction (illustrated above) using Gold Bond Attachment Clips for speed of application.

For more technical information on the versatile Gold Bond Holostud Wall System, write Dept. AF-105.

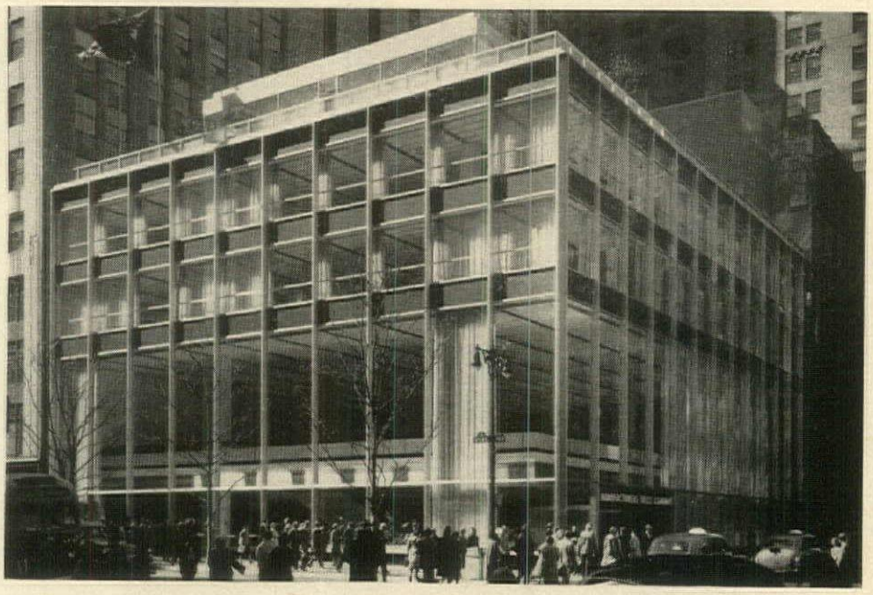
NATIONAL GYPSUM COMPANY • BUFFALO 2, NEW YORK

Build better with Gold Bond®



. . . LATH AND PLASTER

WHY Worthington rates so



UNUSUAL DESIGN

Completely sheathed in glass, the new Manufacturers Trust Building in New York posed an unusual air conditioning problem. The job is taken in stride by a modern Worthington central station system consisting of two 150-ton packaged water chillers.



HEAVY TRAFFIC

Keeping more than 12,000 people cool daily at New York City's new airlines terminal is a tough job. It's handled by a 315-ton Worthington centrifugal refrigeration system, together with Worthington air handling equipment and pumps.

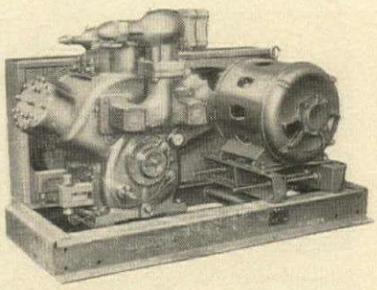


HUMID HEAT

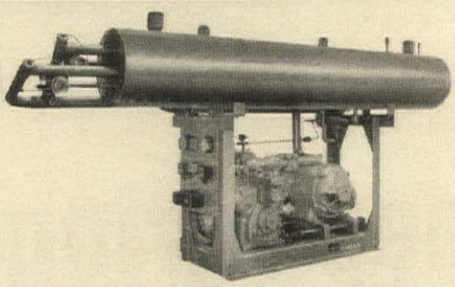
The Sterling, Miami Beach's newest oceanfront hotel, has *everything* but humid heat! An all-Worthington air conditioning system cools 142 rooms and 186,000 cubic feet of dining room and lobby space. Basic unit is a 60-ton Worthington "million-dollar" Freon compressor. Worthington packaged units are also spotted at key points.

many key air conditioning jobs

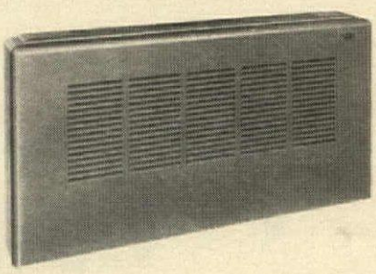
There are good reasons why unusual design, traffic or climate conditions can't trip up a Worthington dealer. He handles the most complete line of central station equipment in the industry. And, he's backed by Worthington's 70 years of specialized air conditioning experience. With assets like these, he's ready to take on *any* air conditioning job! For more details about the complete line, write Worthington Corporation, Air Conditioning and Refrigeration Division, Sect. A.5.57-FO, Harrison, New Jersey.



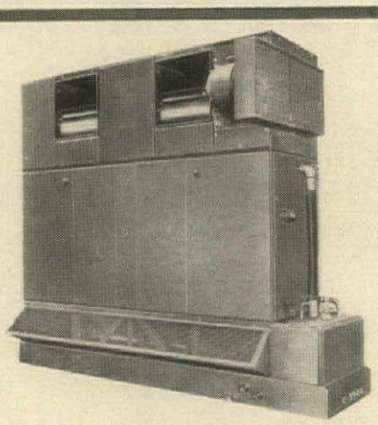
NEW FREON COMPRESSOR. Marked by sturdy construction and higher operating speeds, the new Freon compressor line ranges from 3-150 hp. Scientific balancing of rotating and reciprocating elements assures quiet, vibration-free operation.



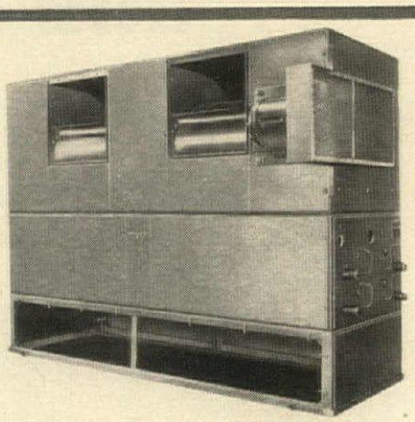
COMPACT LIQUID CHILLERS, in sizes up to 200 hp, provide dependable air conditioning where chilled water is used as the cooling medium. Factory assembled units show trim design: require minimum floor space. "Hearts" of these units are Worthington Freon Compressors.



INDUCTION CIRCULATOR. Room air conditioning unit operating on high-pressure air induction principle. Used for perimeter cooling and heating of multi-story buildings. Absence of moving parts means long life, quiet operation. 75 to 1000 CFM total air distribution.



EVAPORATIVE UNITS are designed for application where water is high in cost or temperature. Units reduce water consumption by 90% or more; do not require cooling towers. Can be adapted for indoor or outdoor use. Six sizes range from 10 to 150 tons.



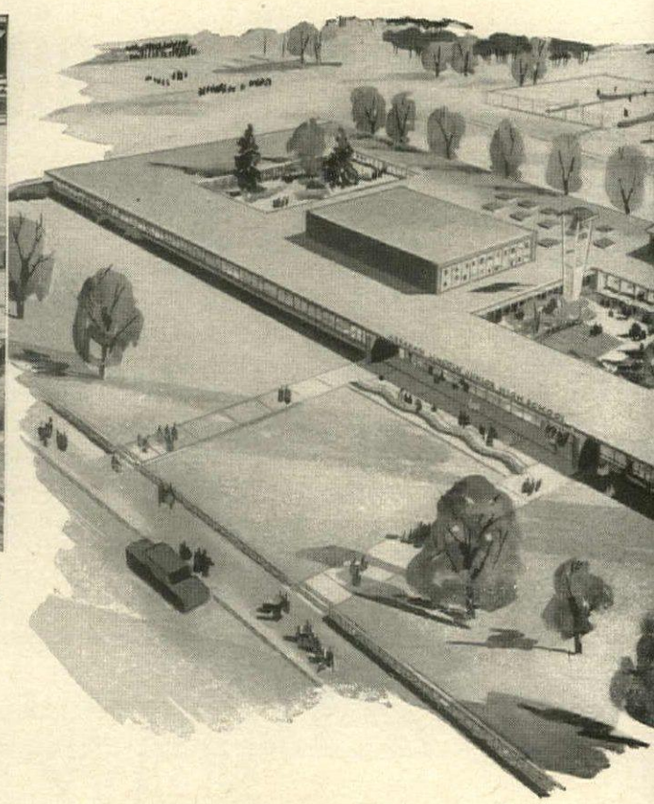
AIR HANDLING UNITS for remote air conditioning. Cooling coils available for direct expansion Freon-12, Freon-22, or chilled water. Floor and ceiling mounted units are functionally designed for easy installation and operation. 1,400 to 13,500 CFM.

WORTHINGTON

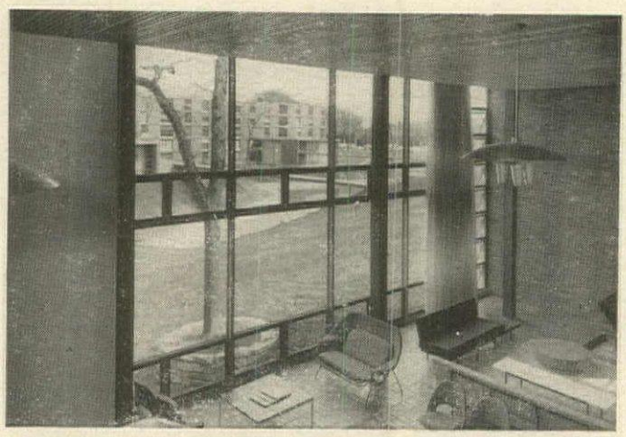
CLIMATE ENGINEERS TO INDUSTRY, BUSINESS AND THE HOME



Republic "Inch-Marked" E.M.T. is approved by the National Electrical Code for concealed, exposed and concrete installations. It also meets standards of Underwriters' Laboratories and carries their inspection seal.



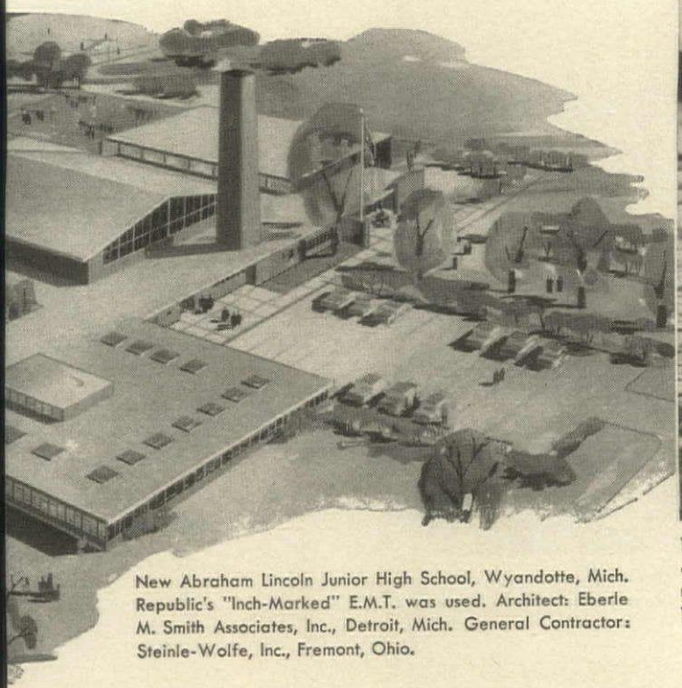
How to keep wiring safe and costs down



CONTEMPORARY DESIGN AND TRUSCON STEEL WINDOWS work hand in hand to allow skillful use of wide, sweeping expanses of glass. These windows made by Republic's Truscon Steel Division, also help provide controlled ventilation and seal weather out or heat in. Here is how Saarinen & Saarinen & Saarinen, Architects, Detroit, Mich., used Truscon Intermediate Projected and Donovan Steel Windows at Drake University, Des Moines, Iowa.



BRIGHT, ATTRACTIVE, EASY TO MAINTAIN, these steam-jacketed kettles in the refectory kitchen at Brown University are made of Republic Enduro Stainless Steel. The surface is solid, cannot chip, flake or peel. It resists dents, abrasion, rust and corrosion. Long service life of Enduro equipment makes it a good investment for any of your clients. And it can also be used for handrails, doors and other decorative purposes.



New Abraham Lincoln Junior High School, Wyandotte, Mich. Republic's "Inch-Marked" E.M.T. was used. Architect: Eberle M. Smith Associates, Inc., Detroit, Mich. General Contractor: Steinle-Wolfe, Inc., Fremont, Ohio.



Your client wants a job that's up to standard and yet stays within cost estimates. You want a job you can be sure of—one that safeguards your reputation. You can have both when you write "Republic Electrical Metallic Tubing or equal" into your specifications.

Your clients can have both of these advantages when your specifications read "Republic E.M.T. or equal."

Then, you can be sure electrical wiring is safe. In Republic "Inch-Marked®" Electrical Metallic Tubing you get the mechanical and electrical protection inherent in a steel conduit system. Wiring circuits are protected against fire, moisture and mechanical injury.

Corrosion resistance is unbroken from end to end. There are no threads to cut. Connectors and couplings go over the tube to make tight joints without disturbing the galvanized finish. And this finish will not chip, flake or peel.

The same number of wires and the same wire sizes are permitted for Electrical Metallic Tubing as for rigid steel conduit. And Republic E.M.T. is approved by the National Electrical Code for open, concealed and concrete-slab construction.

The contractor can help you keep costs down when you give him a choice of raceways. That means he can use his skill and knowledge of electrical installation, along with the product and installation advantages of Republic "Inch-Marked" E.M.T. And you get closer bids.

Add up all these safety advantages, plus the possible bid savings. Then check your specifications. If you need more facts, mail the coupon. Sweet's File will also give you vital information on this modern electrical raceway.



KEY-CONTROL IS THE NEWEST ADVANCE IN SCHOOL LOCKERS. Republic's Berger Division offers the exclusive key feature that eliminates handle noise in busy corridors, assures full-time locking. The key is the handle, so students carry their locker handles on their key rings. No handle maintenance expense. Locker fronts are flush and smooth. Before you specify any school locker system, see Berger's exclusive Key-Control.

REPUBLIC STEEL

World's Widest Range of Standard Steels and Steel Products

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Cleveland 27, Ohio

Please send me more information on:

☐ Republic "Inch-Marked" E.M.T. ☐ Stainless Steel
☐ Key-Control Lockers ☐ Truscon Steel Windows

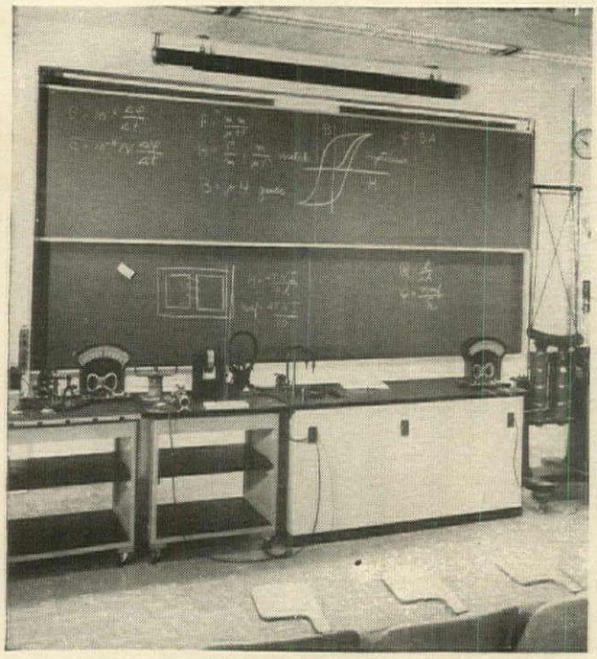
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Company_____

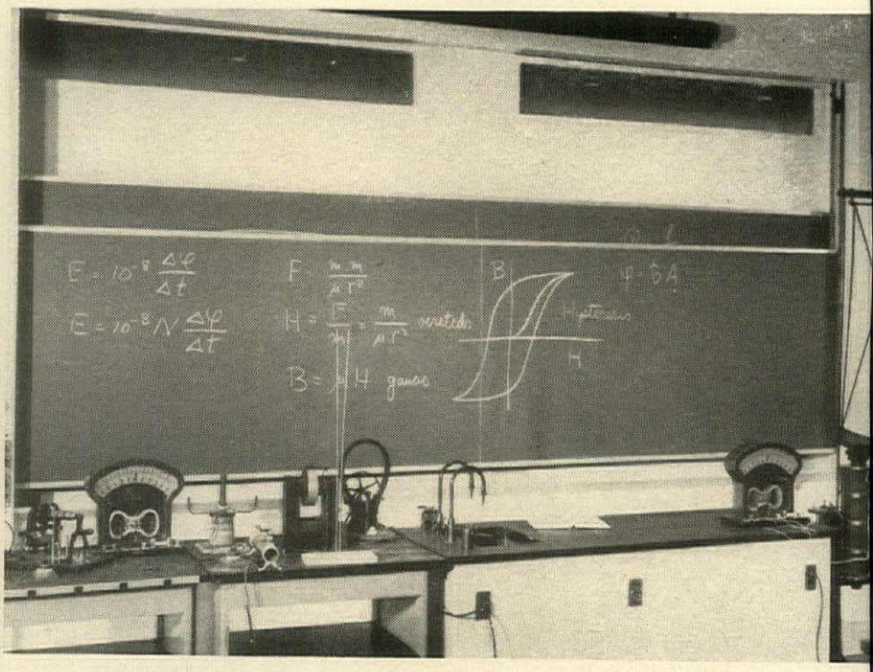
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City_____ Zone____ State_____

K-7702



SLIDING DOUBLE WELDWOOD CHALKBOARD installed in the physics laboratory, University of Pennsylvania, moves on tracks, is electrically operated.

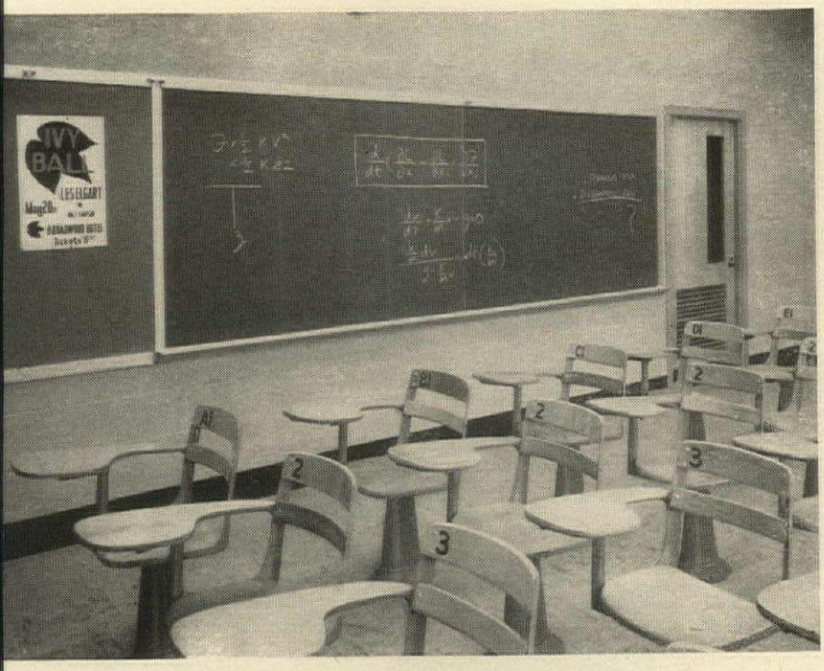


AT EXAM TIME quizzes are prepared on lower chalkboard and covered until needed. Another example of the versatility of Weldwood Chalkboard! Arch: James R. Edmunds, Jr. Installed by: A. M. Masters & Son.

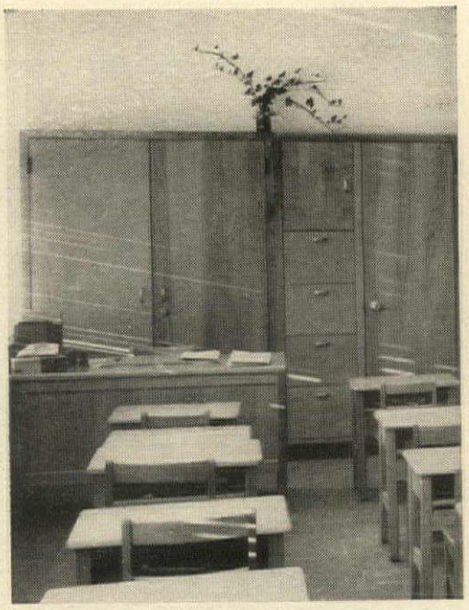
How Weldwood helps you answer the challenge

BEAUTIFUL Weldwood birch paneling and built-in storage wall keys decorating scheme at Hillandale Elementary School, Montgomery County, Md. Arch: McLeod and Ferrara.





INSTALLED COST of Weldwood Chalkboard is usually less than for ordinary chalkboard; it needs no costly fixed grounds or other surface preparation: it mounts directly to wall.



BUILT-IN storage cabinets of Weldwood birch keep classrooms neat, help get away from the old-fashioned "institutional" look. And maintenance costs almost nothing.

of school design

School boards and building committees are looking for new ways to combine beauty and function, new ideas on saving space and lowering maintenance costs. And Weldwood school products can help . . .

Take Weldwood Chalkboard for example. It's a combination chalkboard, bulletin board and visual aid board. Its porcelain-on-steel* face attracts magnets for posting papers and visual aids, its glare-free green color is easy on young eyes, and chalk never "squeaks" on its velvety surface.

Weldwood Chalkboard never needs refinishing. It's composed of a porcelain-faced steel sheet bonded to strong, rigid plywood backed by a sheet of aluminum for balanced construction. It won't shatter, buckle, warp or break under impact, stress or temperature changes.

Beautiful Weldwood hardwoods for paneling and built-ins are another example. Real wood adds a warm and cheery note to classrooms, gyms, lounges and corridors. And it practically eliminates periodic redecoration since Weldwood needs only an occasional waxing to keep it looking new indefinitely.

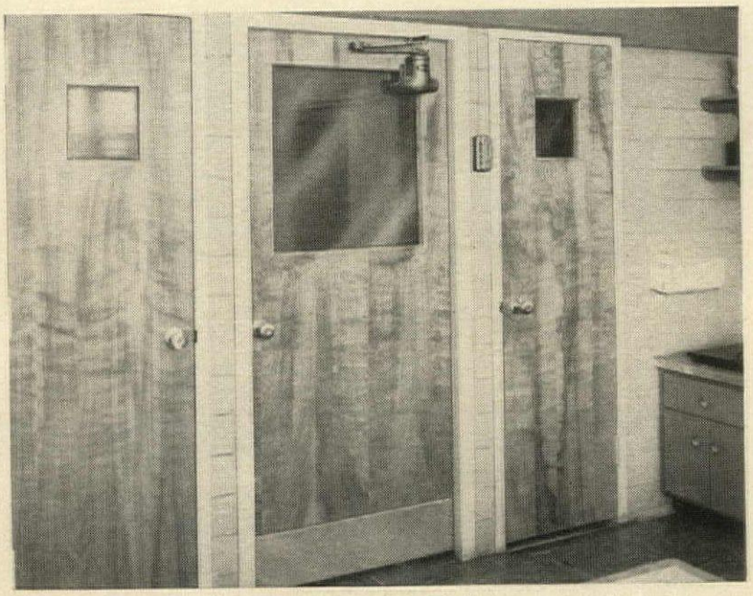
You choose from world's fine woods like walnut; oak; birch; African, Philippine, and Honduras mahogany; cherry; Korina®; maple; and American elm. Exotic species such as Brazilian rosewood, teak, satinwood and zebrawood are also available on special order.

And Weldwood Fire Doors provide the utmost in fire protection. They come in Weldwood veneers to match paneling and are made with the exclusive Weldrok® mineral core patented† by Weldwood.

Guaranteed for life. All of these superior Weldwood products for schools are guaranteed for the life of the building in which they are installed.

For more details on Weldwood Chalkboard, paneling and doors send the coupon or visit any of the 87 United States Plywood Corporation showrooms in principal cities.

*Porcelain faces by The Bettinger Corp. †U.S. Patent No. 2,593,050



WELDWOOD FIRE DOORS are available in flush style or with light cutouts. Lake Hiawatha School, Troy Hills, N. Y. Arch: Emil A. Schmidlin.

Weldwood®

PRODUCTS FOR SCHOOLS

Made by

United States Plywood Corporation

World's Largest Plywood Organization

In Canada: Weldwood Plywood, Ltd., Montreal

United States Plywood Corporation
Weldwood Building, 55 West 44th St., New York 36, N. Y.

Please send me data sheets and installation details on Weldwood Chalkboard ( ) Weldwood Hardwood Plywoods ( ) and Weldwood Doors ( ). AF-10-5

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COMPANY.....

ADDRESS.....

CITY.....STATE.....



This Flexachrome Vinyl Plastic-Asbestos Tile Floor makes a wonderful basketball court for the Gunnery School, Washington, Conn.



For a floor that

scores high on every count

. . . specify Flexachrome!

Don't take a chance with "substitute" flooring . . . when your clients are *sure* to win with Flexachrome.

Flexachrome is the ultimate in vinyl-asbestos resilient flooring. Comfortable to walk on, play on. So durable and long-wearing, your clients will be certain that the two "e's" in Flexachrome stand for *double economy*.

And, if you want colorful beauty, Flexachrome will give it to you the way you like it. Take your choice of 23 sharp, clear colors that won't dim with the years.

For basketball courts use 3/16" Flexachrome for added resiliency and extra wear.

In food areas you'll want Flexachrome for its *greaseproof* qualities, too . . . its resistance to acids and alkalies.

And this close-textured tile really gets the nod from janitors when it comes to *easy cleaning*. Simple sweeping and occasional washing is all that's needed.

So specify Flexachrome for schools . . . from entrance to class rooms, from cafeteria to corridors, from library to labs.

This modern flooring will improve a school's appearance and save maintenance dollars year after year.

Ask your Tile-Tex Contractor to give you complete information and free estimates on Flexachrome and other Tile-Tex Floor and Wall Products. You'll find him listed in the classified telephone directory. Or write:

THE TILE-TEX DIVISION, The Flintkote Company, 1234 McKinley Avenue, Chicago Heights, Illinois

TILE-TEX—PIONEER DIVISION, The Flintkote Company, P. O. Box 2218, Terminal Annex, Los Angeles 54, California

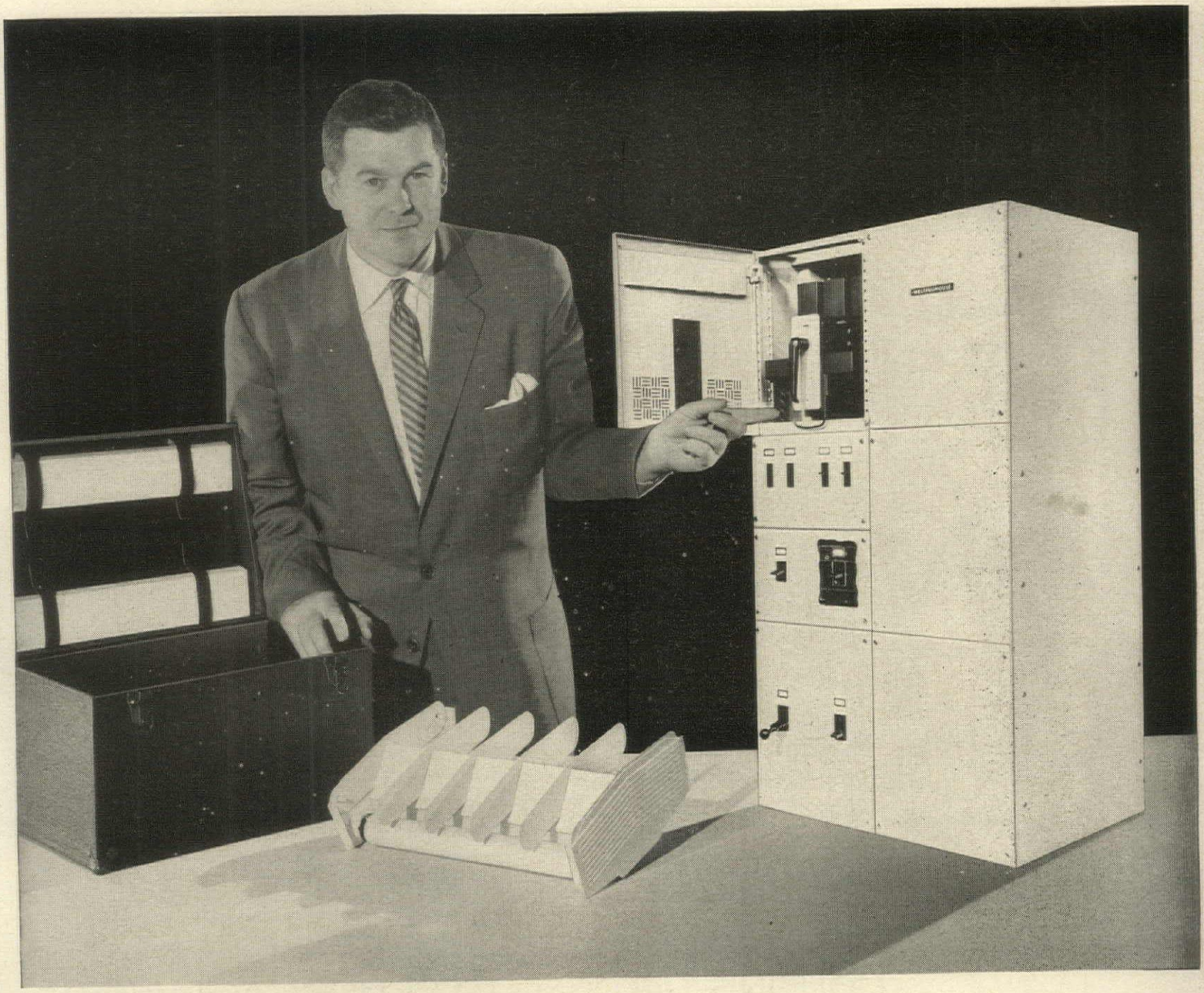
The Flintkote Company of Canada, Ltd., 30th Street, Long Branch, Toronto, Canada

*Reg. U. S. Pat. Off. †Trademark of The Flintkote Company

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SEE OUR CATALOG IN SWEET'S FILES.



WHATEVER YOUR ELECTRICAL PROBLEM, WE ARE READY TO SERVE YOU

This man is the construction sales engineer in your nearby Westinghouse office.

He's an electrical specialist.

His job is to help you solve electrical problems on the kind of projects you handle.

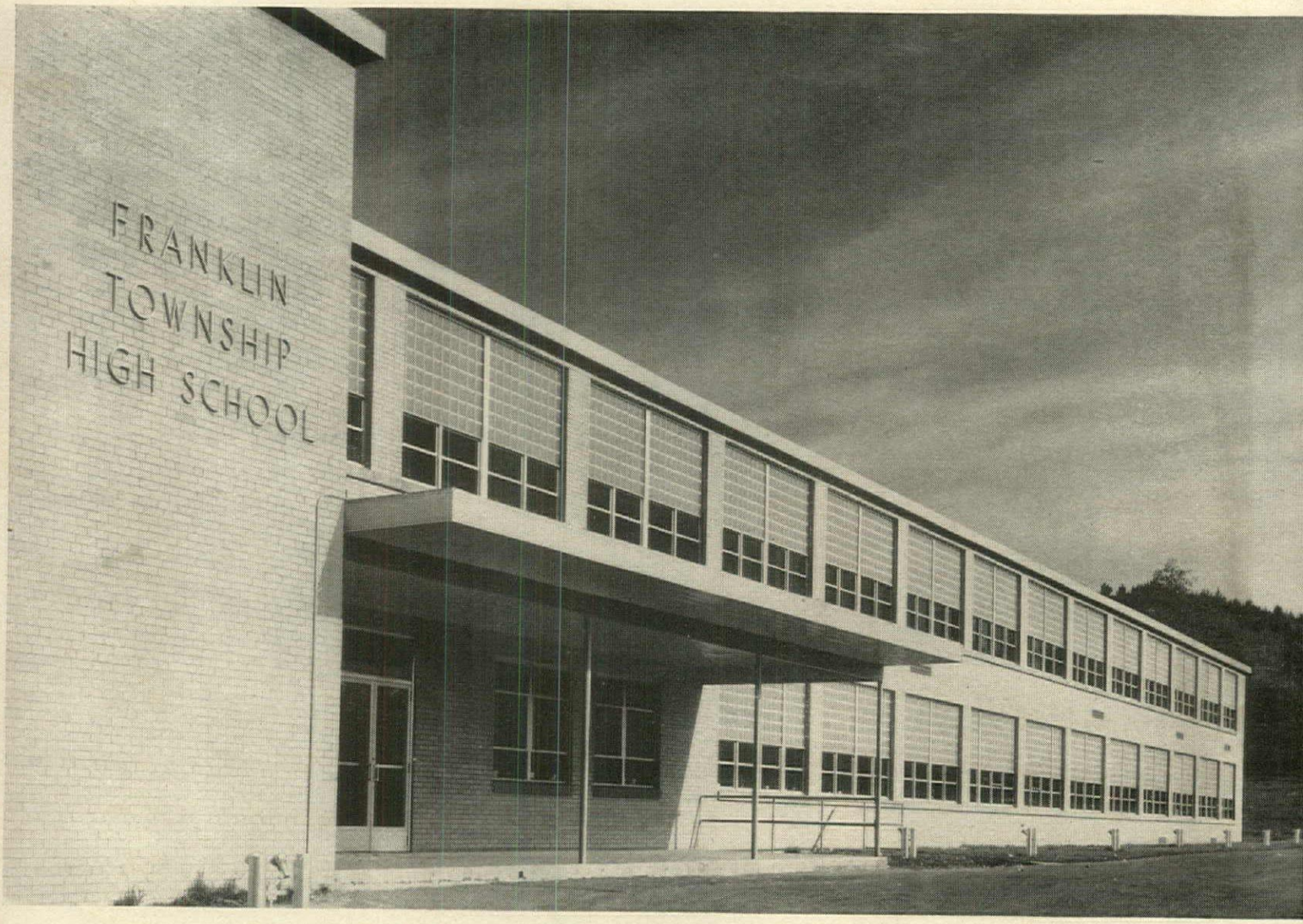
In fact, from preliminary design through electrical system planning . . . from product demonstrations through operational proof . . . he and his team of Westinghouse engineers will work with you.

DP-5019-A

CHECK THE EXAMPLES
ON THE FOLLOWING PAGES . . . →

YOU CAN BE **SURE**...IF IT'S

Westinghouse



Franklin Township High School, Newlonsburg, Pennsylvania.

LIGHTING TAILORED TO SCHOOL ACTIVITIES SOLVES THE PROBLEM OF VARIED CLASSROOM NEEDS

Low ceiling heights . . . and a need to match seeing conditions to academic programs. These made controlled lighting a basic consideration here.

The answer: individual lighting systems—each matched to a specific, functional requirement.

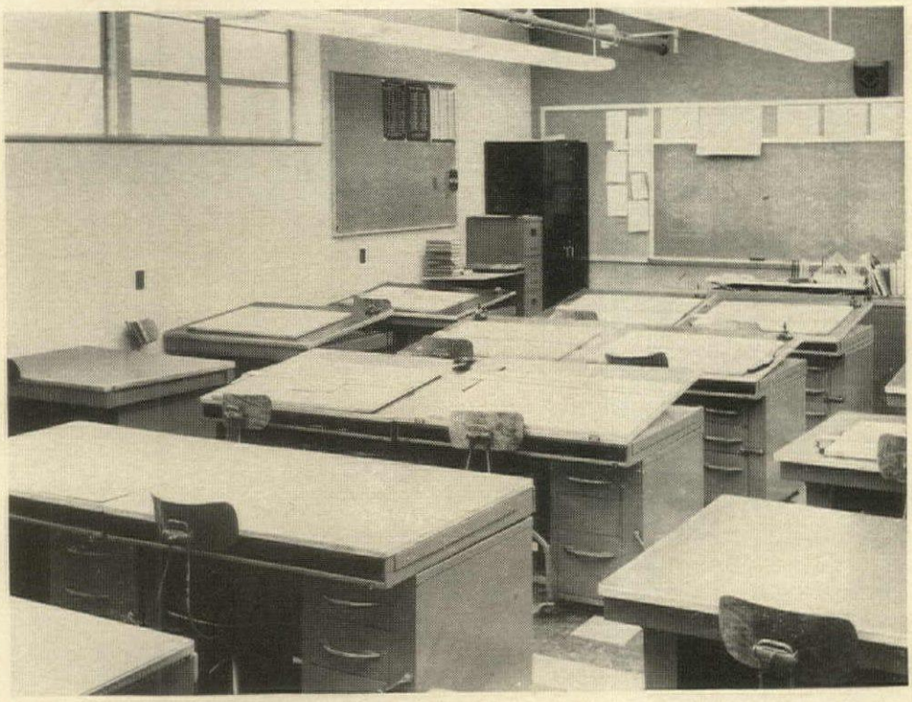
In the mechanical drawing department, for example, the Westinghouse LC fluorescent luminaire was selected. A direct-indirect type, it provides high illumination in all parts of the room . . . gives a diffused, efficiently utilized light.

Further, in the manual training rooms, where good lighting is also a factor, FPC fluorescent luminaires were installed. They are designed for general area illumination and deliver a maximum light output. Their rugged construction makes them particularly suitable for this area.

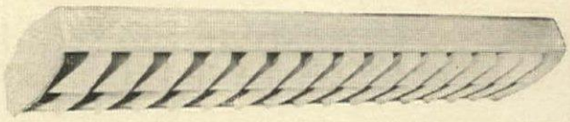
Whatever the school lighting problem, the Westinghouse construction and lighting sales engineers stand ready to help you solve it. DP-5019-B

YOU CAN BE SURE...IF IT'S

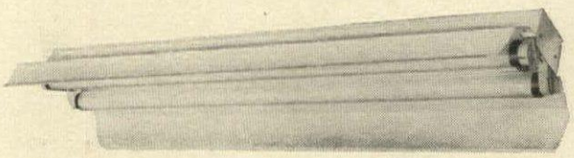
Westinghouse

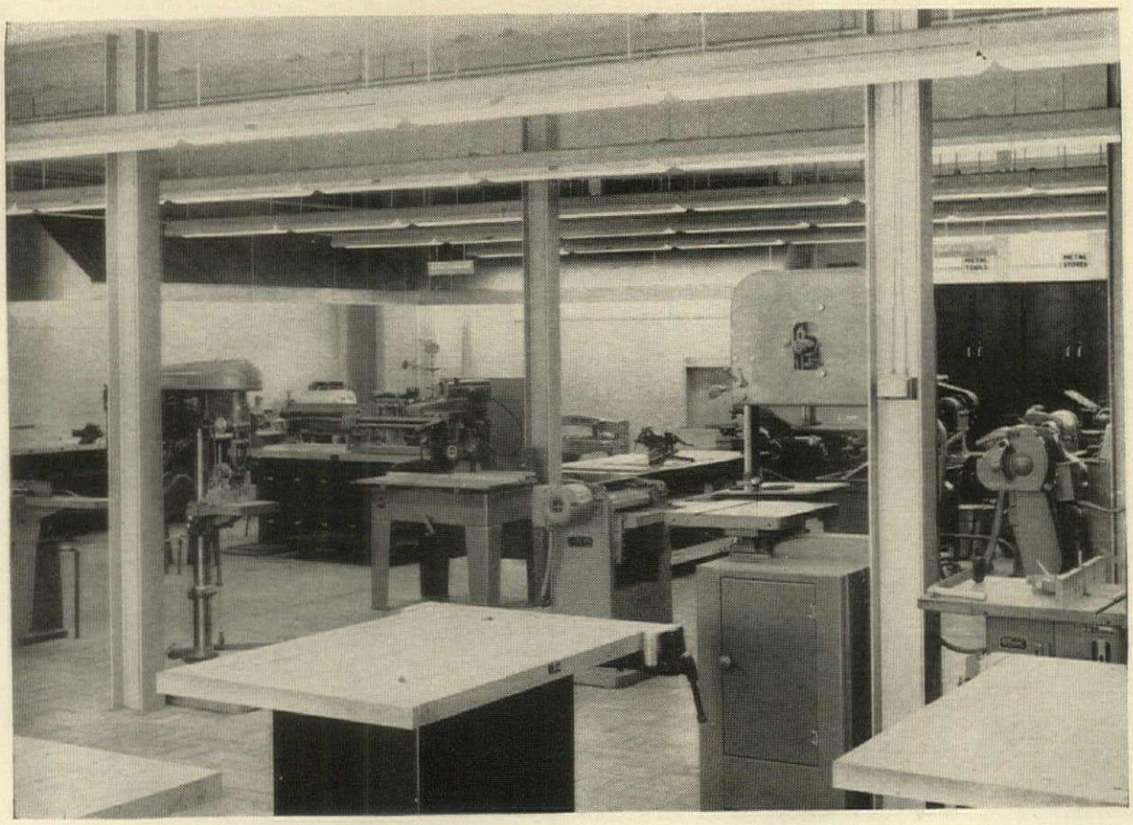


LC Fluorescent Luminaire, a direct-indirect type, provides the proper illumination levels required in the mechanical drawing department, and other classroom areas.



FPC Fluorescent Luminaire delivers maximum light output in the manual training areas, giving quality lighting with few shadows . . . resulting in better workmanship.
DP-5019-C

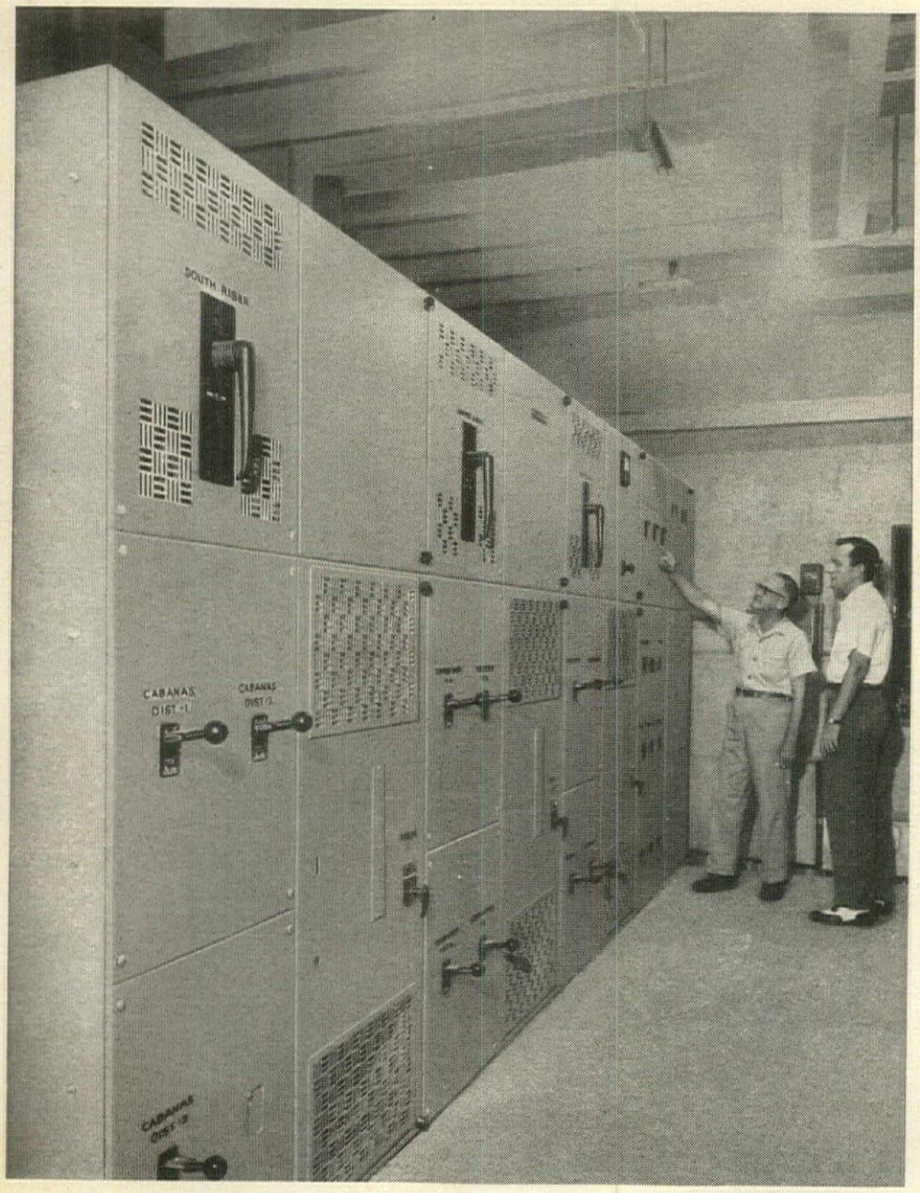






Fontainebleau Hotel, Miami Beach, Florida. *Architects:* Morris Lapidus & Associates, Miami Beach. *Consulting Engineers:* Sasnett & Bennett Engineering Co., Miami. *General Contractor:* Taylor Construction Co., Miami. *Electrical Contractor:* Max Belin Electric Co., Miami.

ELECTRICAL EQUIPMENT, MATCHED WITH THE FINEST IN HOTEL CONVENIENCE, ASSURES RELIABLE POWER SERVICE



Since many of its guest services are electrically operated, the new 15-million-dollar Fontainebleau Hotel demands completely reliable power distribution.

Called during the planning stages, Westinghouse engineers helped select an electrical system that virtually assures continuous service. The base: two Westinghouse building-type switchboards—providing circuit breaker protection for the entire system.

In case of electrical interruptions, both switchboards permit quick restoration of service. A flip of the breaker handle does it.

Why not call your Westinghouse construction sales engineer to help you solve similar problems? DP-5019-F

YOU CAN BE **SURE**...IF IT'S

Westinghouse

Capture light and color **through** a door



Architects: Hudgins, Thompson, Ball and Associates, Oklahoma City

This beautiful translucent glass door borrows light and color from another room but still maintains privacy. Here the architects designed their own offices to use the soft warmth of patterned glass to balance the polished wood of the walls and furnishings.

The *Securit** Interior Glass Door by Blue Ridge is neutral in tone. Its gentle pattern complements the decoration of both rooms. It's a door that can take plenty of daily hard use because it's tempered to be tough.

Distinctive, easy-to-apply hardware arrives at the job with the door, making it simple to hang. No cutting or mortising is necessary, and you can forget about painting and costly maintenance.

The cost of the *Securit* Interior Glass Door compares favorably with that of high-quality doors of other materials. You save on installation charges as well.

Ask your L·O·F Glass Distributor or Dealer for full information. Look for him under "Glass" in the yellow pages of the phone book. *®

BRIEF DATA

Glass—3/8" thick Muralex patterned on both surfaces.

Tempered—three to five times stronger than untempered glass of same thickness.

Reversible—can be used right or left hand.

Standard Sizes—2'6" x 6'8" 2' 5 11/16" x 6' 7 1/16"
2'8" x 6'8" 2' 7 11/16" x 6' 7 1/16"
3'0" x 6'8" 2'11 11/16" x 6' 7 1/16"
3'0" x 7'0" 2'11 11/16" x 6'11 1/16"

For more complete information, see the Securit Door insert in Sweet's Architectural File.

securit® INTERIOR GLASS DOORS

BLUE RIDGE GLASS CORP. Made by BLUE RIDGE GLASS CORP.

Sold by LIBBEY·OWENS·FORD Distributors LOF GLASS

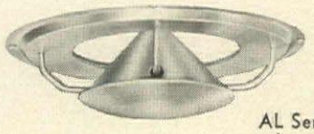
Libbey·Owens·Ford Glass Co.
608 Madison Ave., Toledo 3, Ohio

Please send me your folder, *Blue Ridge Securit Interior Glass Doors.*

NAME (PLEASE PRINT) _____

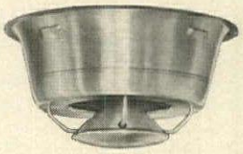
ADDRESS _____

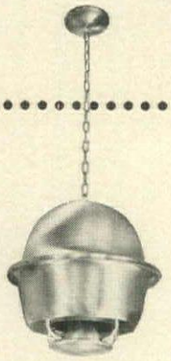
CITY _____ ZONE _____ STATE _____



AL Series Baffle
—low ceiling

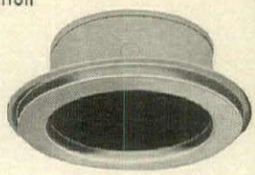
BL Series Baffle
—normal height ceiling



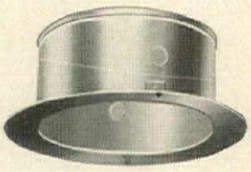


SR Series Baffle
—high ceiling

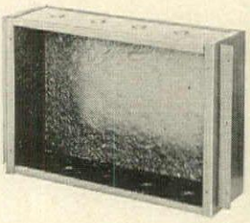
CP Series Enclosures
—new construction



XCP Series Enclosures
—existing construction



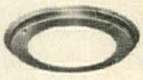
P Series
Enclosures
(box type)



Grilles



Accessories



Intercom Equipment



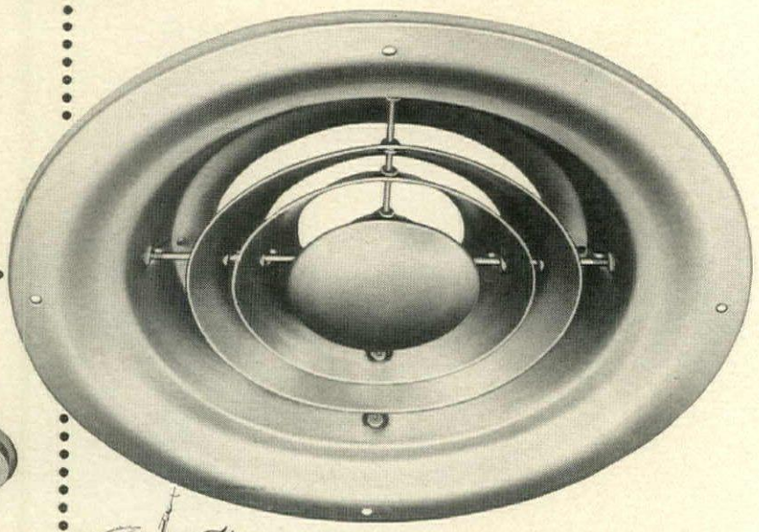
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Lowell Protective Speaker Enclosures — Protects speakers from fire, dust, rodents and mortar. Heavy gauge, spot-welded steel. Exteriors rust proofed. Undercoated interior on larger models prevents metallic resonance.

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Lowell Blank Metal Consoles and Turrets (not illustrated)—Single, double and triple pedestal console units to accommodate up to a 60 classroom unit. Blank turrets to match. Heavy gauge steel in silver grey hammertone finish. Worktop, office grey linoleum.

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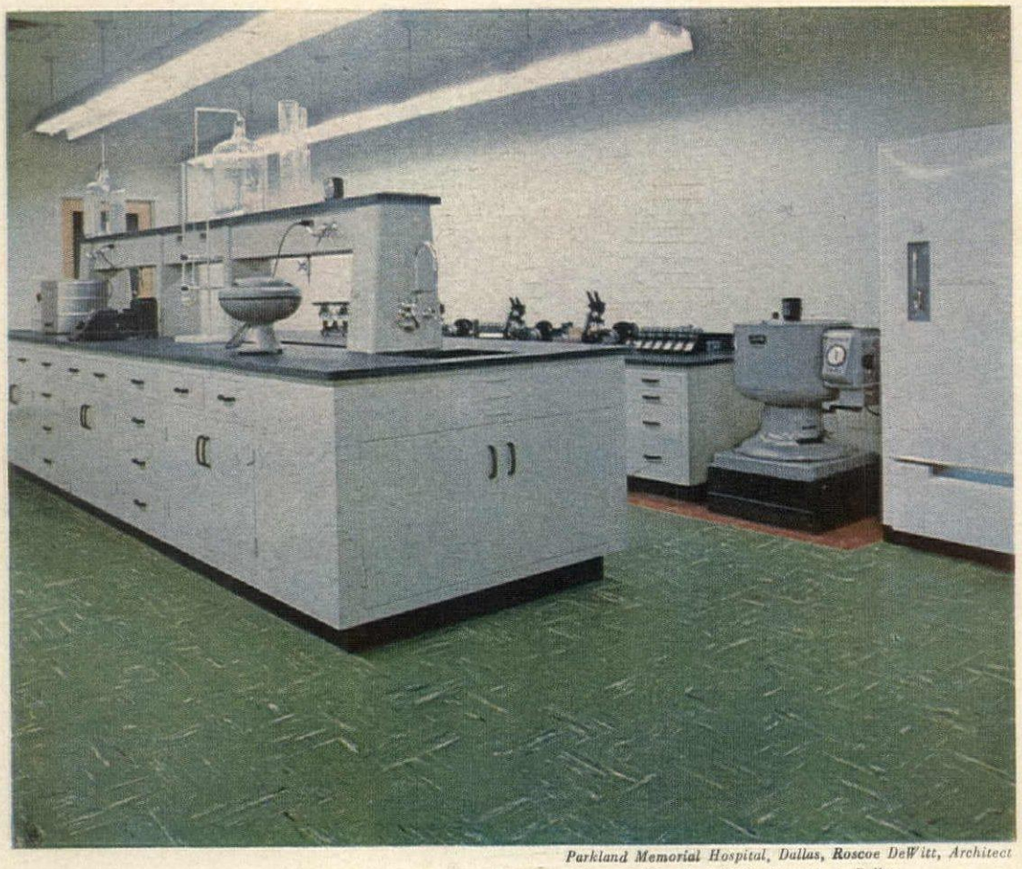
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Vinylized AZPHLEX floors
answer the laboratory floor problem



Parkland Memorial Hospital, Dallas, Roscoe DeWitt, Architect
Albert H. Scheidt, FACHA, Consultant, Dallas



Laboratories put floors to a severe test, subject as they are to unusual types of abuse. Vinylized Azphlex is the *new* and better flooring that is especially qualified to serve in such areas.

Because it is vinylized, Azphlex has greater resistance to most chemical products, food greases, petroleum oils and solvents. Vinylizing gives Azphlex other characteristics that are far superior to ordinary greaseproof tiles. It gives it a tightly textured, smooth surface — one that is easier to clean and keep clean with minimum care. It gives it added toughness that means added years of wear.

For modern hospitals and institutions where floor beauty is a requisite, vinylizing gives Azphlex a surprising range of clean, bright colors with superior light reflectance.

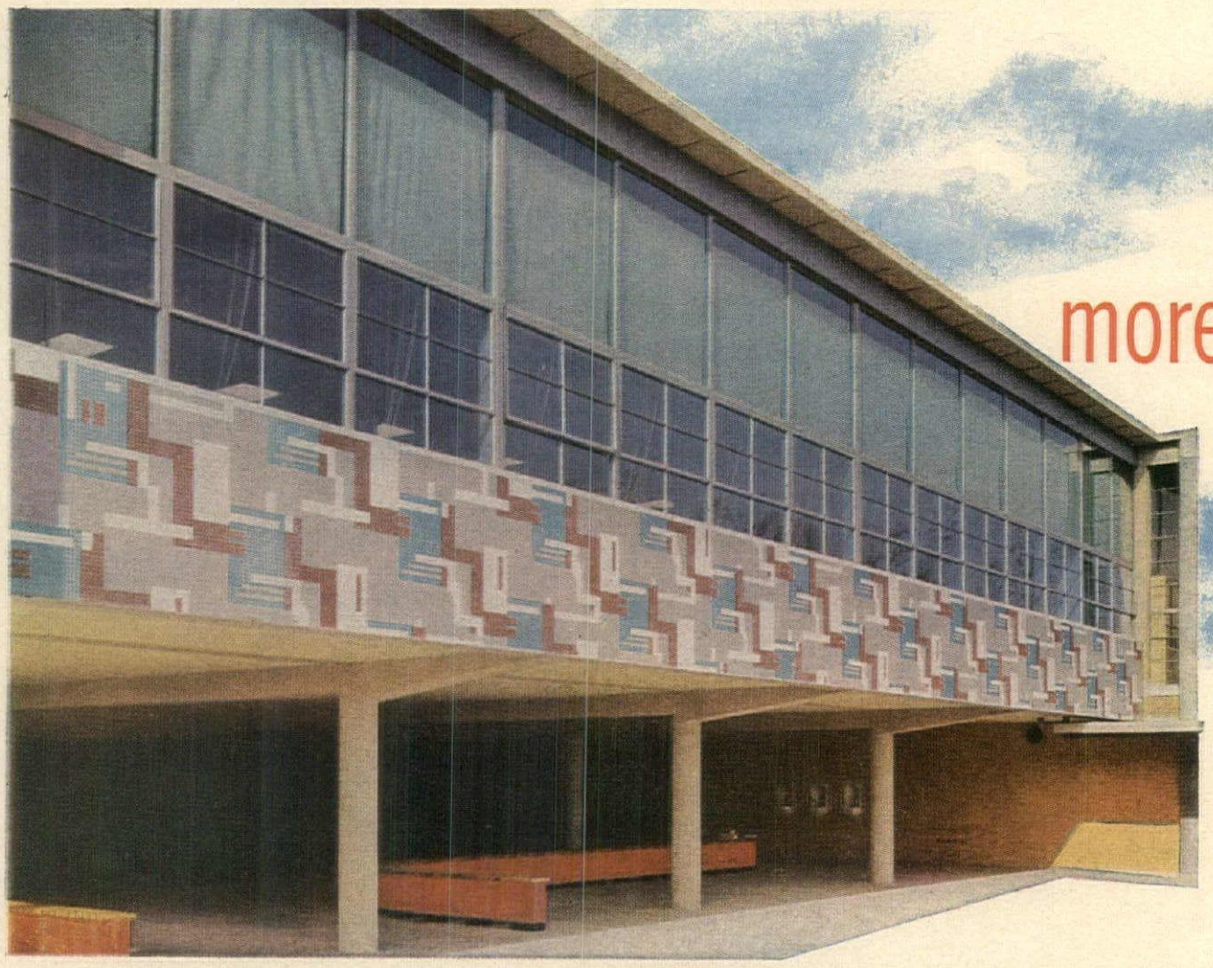
These are some of the qualities that are making Vinylized Azphlex a prime choice with hospital authorities — plus the fact that Azphlex *costs no more* than ordinary greaseproof tile. Why not get all the facts on Azphlex before you select those specialized floors in your hospital. At no obligation to you, a qualified representative will call on you to give you the full Azphlex story.

AZPHLEX

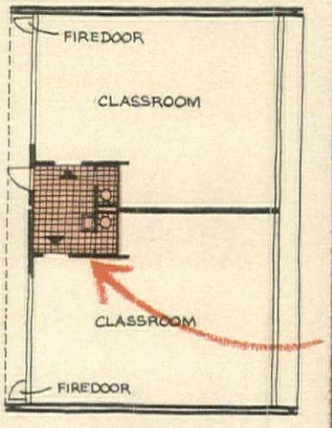
VINYLIZED TILE

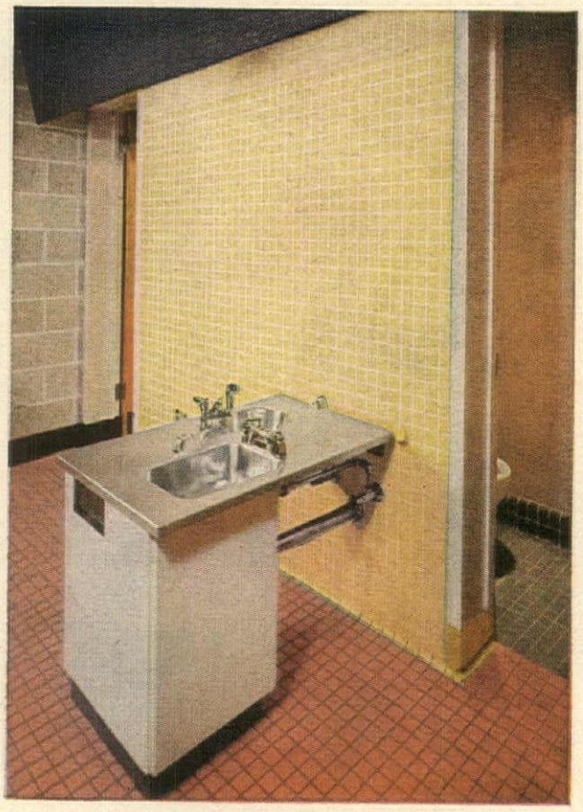
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MAKERS OF VINA-LUX • AZROCK • DURACO • AZPHLEX

more color,



Library Facade, High School, New Bern, N. C.;
Architects: Burett H. Stephens and Robert H. Stephens.
Special Design in Suntile Ceramics—231 Pearl Grey;
204 White; 240 Red; 271 Turquoise.





Each two-classroom unit in this "cluster-plan" school has a practical vestibule-washroom-toilet area. Suntile Ceramics in contrasting colors help appearance and maintenance. Wall: 281 yellow. Floors: 240 Red, 271 Green. Hallow Tree Ridge School, Darien, Conn. Architects: Ketchum, Gina and Sharp.

ceramic *Suntile* means longer life, less up-keep for schools





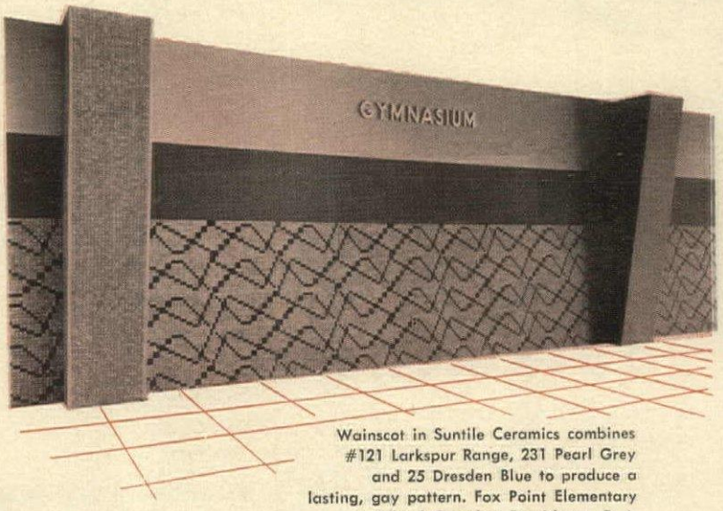
Pictured here are some of the many ways in which school architects are using beautiful ceramic Suntile as a triple-duty finish—colorful, economical, easily maintained.

For interiors, glazed Suntile* offers a permanent, impervious surface and a wide range of colors especially developed for school use by color authority Faber Birren.

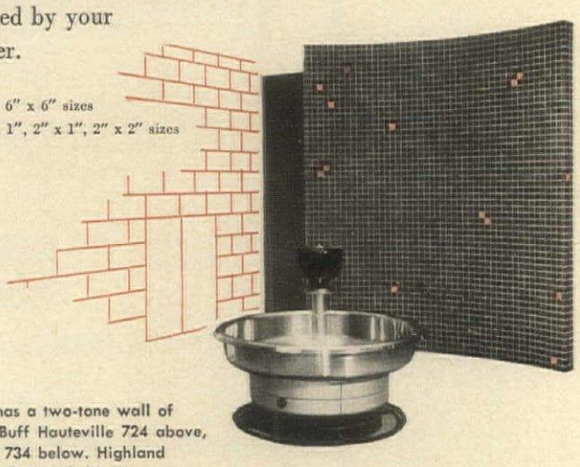
Unglazed Suntile Satinized Ceramics, made in smaller sizes**, permit interesting effects of pattern and texture—in walls or floors, indoors or out.

Whatever type Suntile you use, you can depend on proper installation—it's guaranteed by your Suntile dealer.

*4¼" x 4¼" and 6" x 6" sizes
**¾" x 1½", 1" x 1", 2" x 1", 2" x 2" sizes



Wainscot in Suntile Ceramics combines #121 Larkspur Range, 231 Pearl Grey and 25 Dresden Blue to produce a lasting, gay pattern. Fox Point Elementary School Corridor, Providence, R. I. Architects: Cull and Robinson.

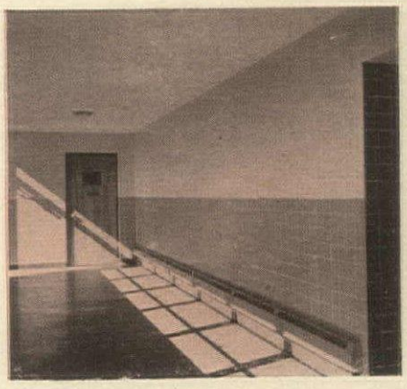


Curved Wall of 230 Black Suntile Ceramics with accents of 243 Pink and 281 Yellow serves both as a practical splash-back and a center of decorative interest. Meadow Lane School, Meadow Lane, N. Y. Architects: Ketchum, Gina and Sharp.

Sunny corridor has a two-tone wall of glazed Suntile—Buff Hauteville 724 above, Grey Hauteville 734 below. Highland Elementary School, Westfield, Mass. Architect: James A. Britton.

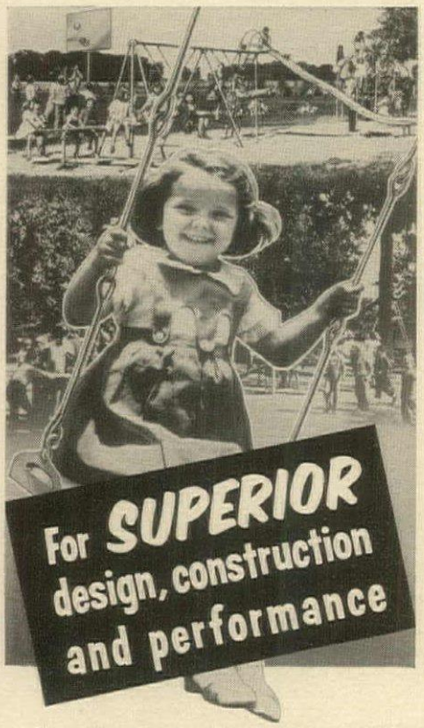
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DATES

American Public Works Assn., Oct. 2-5, Hotel Schroeder, Milwaukee, Wis.

Producers' Council, Inc., fall meeting and chapter presidents' conference, **Oct. 2-5,** Hotel Statler, Detroit.

National Retail Lumber Dealers Assn., annual exposition, **Oct. 11-16,** Cleveland Auditorium, Cleveland.

National Assn. of Assessing Officers, Oct. 16-19, Hotel New Yorker, New York City.

National Assn. of Housing and Redevelopment Officials, annual meeting, **Oct. 16-20,** Hotel Statler, Cleveland.

National Savings & Loan League, fall management conference, **Oct. 16-20,** Olympic Hotel, Seattle, Wash.

Fourth annual conference of achitects, Oct. 18-20, University of Illinois, Urbana, Ill.

Architectural Woodwork Institute, annual convention, **Oct. 20, 21,** LaSalle Hotel, Chicago.

National Conference on Standards, sponsored by National Bureau of Standards and American Standards Assn., **Oct. 24-26,** Sheraton-Park Hotel, Washington.

National Motel Show, second annual, **Oct. 24-26,** Morrison Hotel, Chicago.

Institute of Traffic Engineers, annual convention, **Oct. 24-27,** William Penn Hotel, Pittsburgh.

Porcelain Enamel Institute, annual meeting, **Oct. 26-28,** The Greenbrier, White Sulphur Springs, W. Va.

National Electrical Contractors' Assn., annual convention and first National Electrical Exposition, **Oct. 31-Nov. 2,** Waldorf Astoria Hotel, New York.

National Paint, Varnish & Lacquer Assn., annual convention, **Oct. 31-Nov. 2,** Shoreham and Sheraton-Park Hotels, Washington.

Mortgage Bankers Assn. of America, annual convention, **Oct. 31-Nov. 3,** Statler and Biltmore Hotels, Los Angeles.

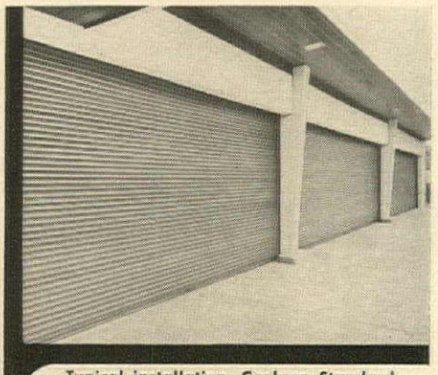
AIA district meetings: Northwest, **Sept. 9-11,** Glacier Park, Mont.; Sierra Nevada, **Oct. 6-8,** Santa Barbara, Calif.; Gulf States, **Oct. 6-8,** New Orleans; Central States, **Oct. 13-15,** St. Louis; New York, **Oct. 13-15,** Albany; Texas, **Nov. 2-4,** Houston.

US Savings & Loan League, annual convention, **Nov. 7-11,** Miami Beach.

National Lumber Manufacturers Assn., annual board meeting, **Nov. 14-16,** Shoreham Hotel, Washington.

Conference on survival of US industry in atomic warfare, sponsored by Armour Research Foundation, **Nov. 17,** Illinois Institute of Technology, Chicago.

Porcelain Enamel Design competition closes **Dec. 12.**



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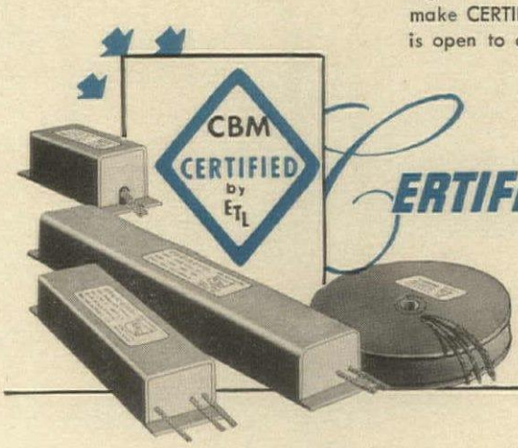
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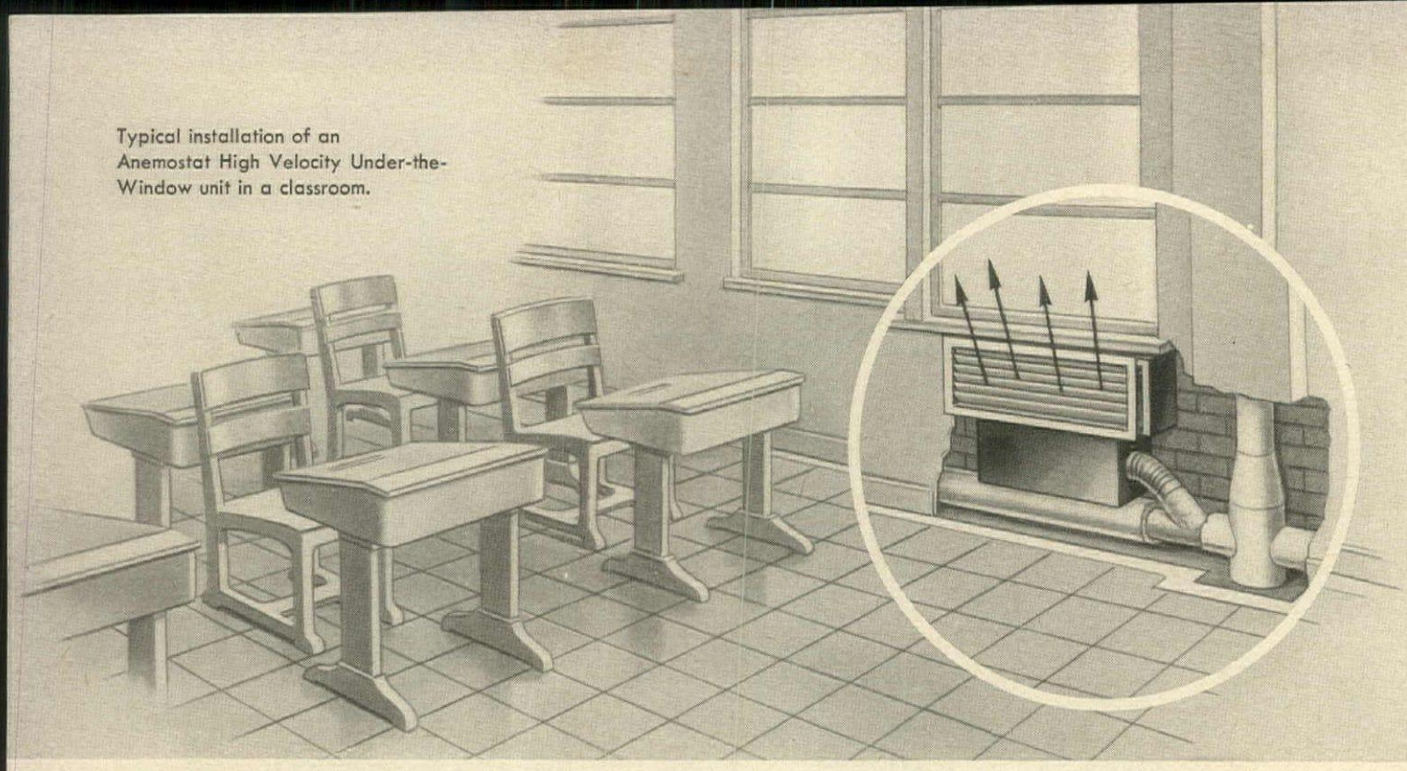




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Typical installation of an Anemostat High Velocity Under-the-Window unit in a classroom.

How to deliver high velocity air to schoolrooms

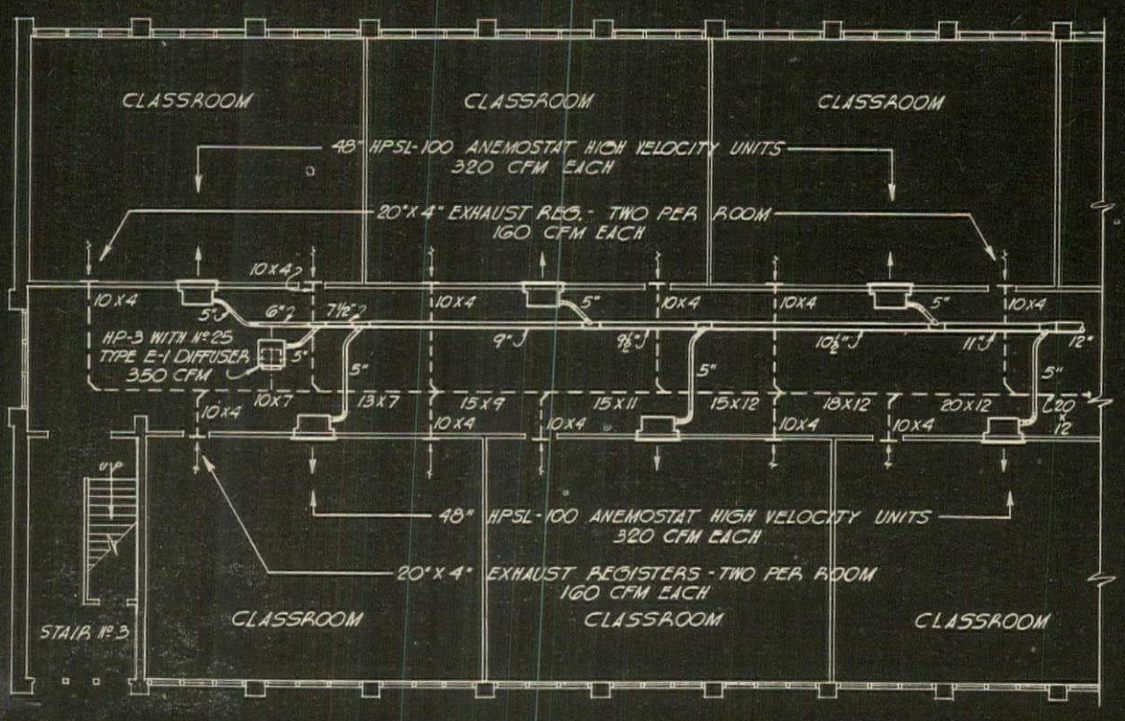
Shown here are two ways of using the Anemostat All-Air High Velocity system of draftless air distribution for heating and ventilating schools. Under-the-Window units (above) are the most practical for colder climates. Corridor distribution (below) is preferable in warmer climates.

Advantages:

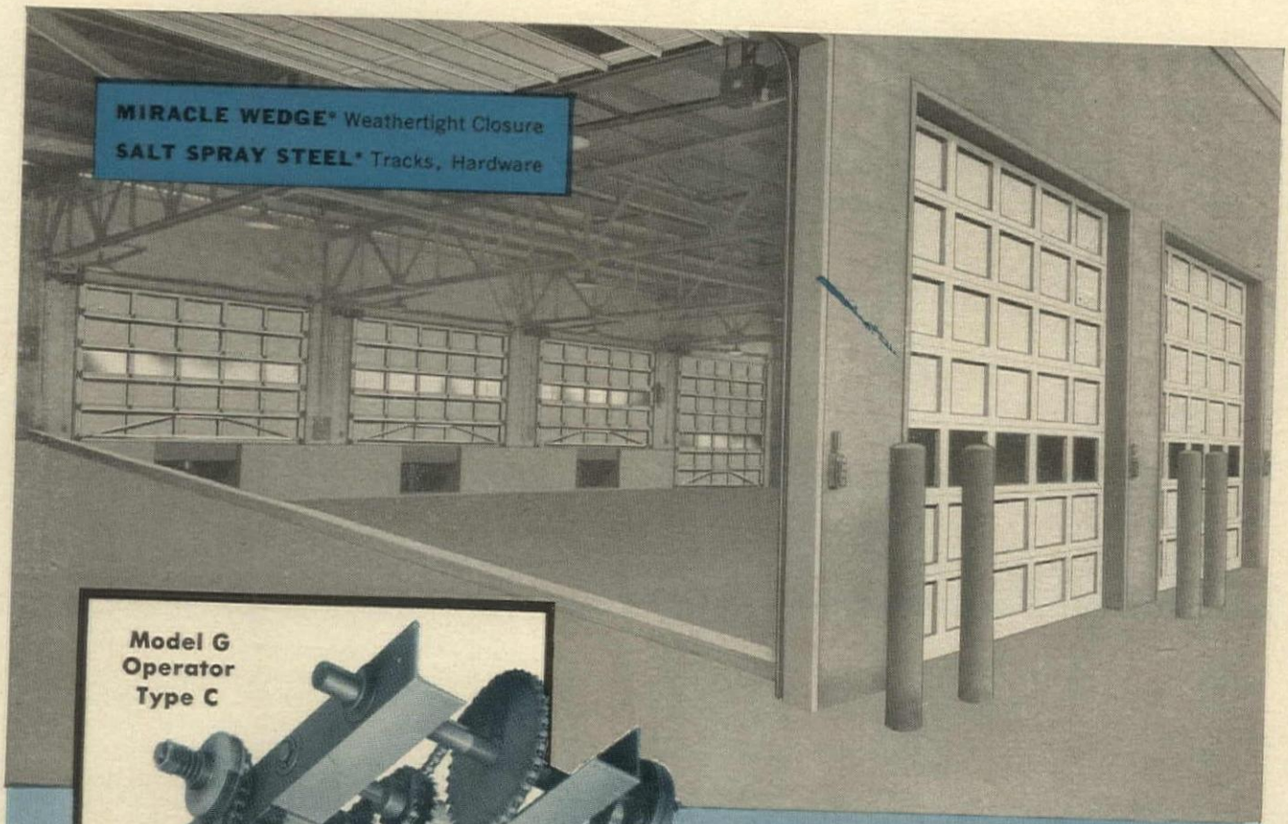
- All-Air High Velocity units require smaller than conventional ducts, thus save space and money.
- All-Air HV units can be used for individual or zone control, in single or dual duct installation.
- Since air is supplied from the main equipment room, there is no need to break through the outside of the building for prime air make-up. This eliminates grilles, dampers, possibility of leaks.
- The Anemostat All-Air HV system can be simply installed by the sheet metal trades. No supply or return pipes are required. Units are quiet, need a minimum of maintenance from custodians.

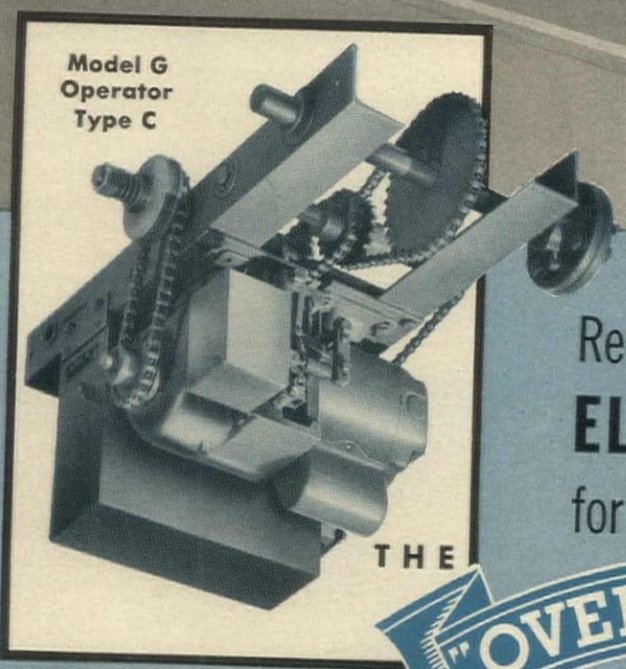
For latest data on All-Air High Velocity units, write on your business letterhead for new Selection Manual 50 to Anemostat Corporation of America, 10 E. 39 Street, New York 16, N. Y.





Diagrammatic layout shows corridor distribution of high velocity air for wing of school.





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OVERHEAD DOOR CORPORATION

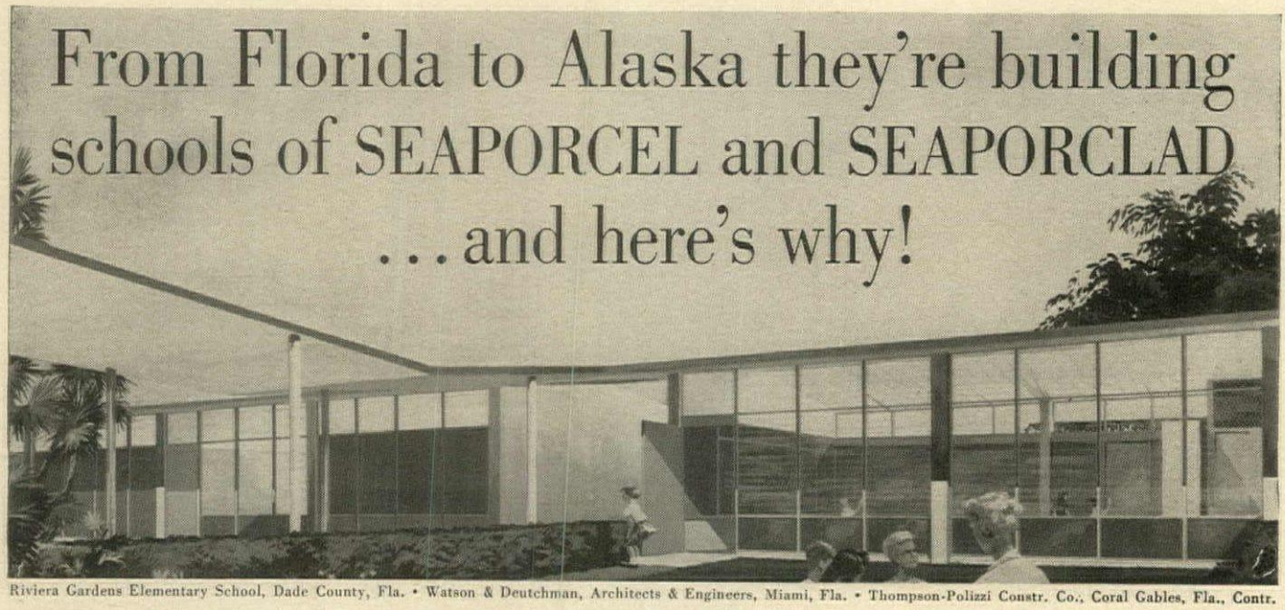
Hartford City, Indiana

Manufacturing Divisions: Cortland, N. Y. Lewistown, Pa. Dallas, Tex. Hillside, N. J. Nashua, N. H. Oklahoma City Portland, Ore.

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A COMPLETE LINE OF DOORS . . . A COMPLETE PRICE RANGE

From Florida to Alaska they're building schools of SEAPORCEL and SEAPORCLAD ... and here's why!



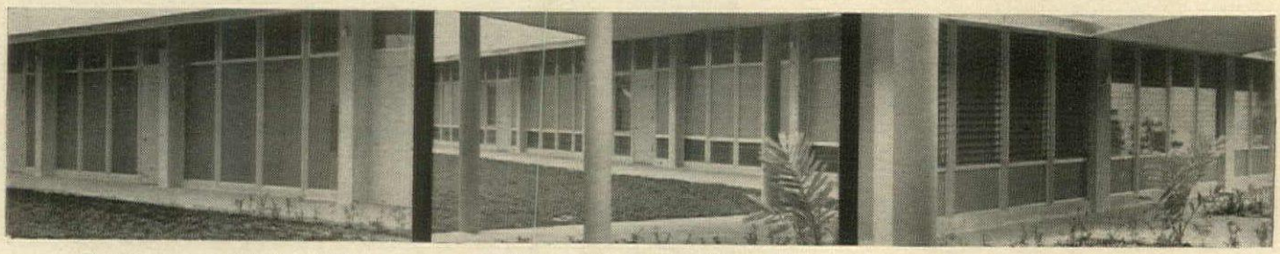
Riviera Gardens Elementary School, Dade County, Fla. • Watson & Deutchman, Architects & Engineers, Miami, Fla. • Thompson-Polizzi Constr. Co., Coral Gables, Fla., Contr.

NORTH, SOUTH, EAST, WEST... neither sun, nor rain, nor sleet, nor snow affect Seaporcel's SEAPORCLAD panels. Temperatures may be high or low but Seaporcel porcelain withstands the extremes without the slightest injurious effect.

In the new Miami Riviera Gardens Elementary school close to 6000 sq. ft. of SEAPORCLAD panels were used. Laminated to ¼" of aluminum honeycomb core and backed up with passivated zinc coated steel, the porcelain enamel face was finished in light blue and soft tan semi-matte.

There was no "U" factor involved on this Florida job as contrasted with a recent Seaporcel installation at Ketchikan, Alaska, for the Ketchikan High School. In this latter case extremes of climate required a very low "U" factor so the Seaporcel porcelain was backed up with 3 inches of Fiberglas insulation resulting in a "U" factor not exceeding .079.

Seaporcel porcelain skins and Seaporclad laminated panels are your definite answer to economy, beauty of color, permanence, simplicity of design and speed of installation. Send us your plans and get our prices.



Panels measure 39" x 87" *Shown are panels 39" x 64"* *These panels are 39" x 21"*

Just a few of the many school jobs recently completed or under way

Jefferson High School
Portland, Oregon
Roxbury Elementary School
Stamford, Conn.
Fontbonne Academy
Milton, Mass.
Franklin School
Pueblo, Colorado
Brookfield & Lutheran High Schools
Milwaukee, Wisc.
Ketchikan High School
Ketchikan, Alaska
King Street Elementary School
Port Chester, N. Y.
Industrial Canal High School
New Orleans, La.

Junior High School
Davenport, Iowa
Temple Univ. Medical School
Philadelphia, Pa.
Phoenix Memorial Bldg.—Univ. of Michigan
Ann Arbor, Mich.
Notre Dame High School
Chicago, Ill.
Southwest Junior High School
Johnson County, Kansas
Senior High School
West Springfield, Mass.
Patterson J. H. School
Lethbridge, Canada

Robert E. Lee School
Norfolk, Va.
MIT Auditorium
Boston, Mass.
Meadowbrook Jr. High School
Newton, Mass.
North Penn. Jr. & Sr. H. S.
Lansdale, Pa.
Bishop Duffy H. S.
Niagara Falls, N. Y.
Oak Park Elementary School
Stillwater, Minn.
Elementary School
North Annville Township
Lebanon County, Pa.

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In Canada Seaporcel is Manufactured by General Steel Wares, Ltd., London & Toronto, Ontario
Complete erection and engineering departments

SEE OUR CATALOG IN SWEET'S

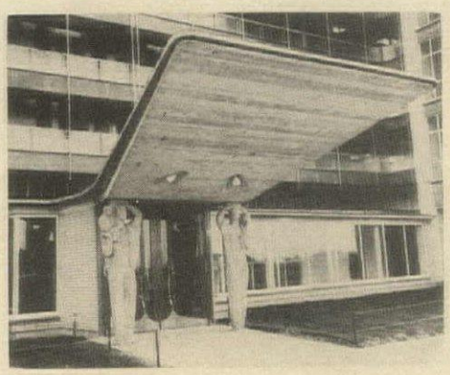
*Reg. U. S. Pat. Off.

PARENTHESES

(WISTFUL)

In a popular play several years ago that wonderful actress, Shirley Booth, playing the part of a slovenly housewife in a wrap-around house dress, went out on her porch and called wistfully for a little white dog which had strayed. "Come back, little Sheba," she called sadly. "Come back, come back. . . ." The dog, the play soon developed, was a symbol of the past.

Coming across a photograph of the entrance to a new Belgian apartment group recently caused the image of Miss Booth to recur. She was standing on her porch in the same slatternly dress, but this time she was playing a rather worn muse of architecture, calling "Come back, little Caryatid, come back." Or did this pet ever stray?



(INTIME)

For their August issue this summer *Vogue* magazine asked Critic Aline Saarinen to write an article about "Four architects helping to change the look of America." Mies van der Rohe, Philip Johnson, Gordon Bunshaft and Eero Saarinen.

Toward the end of the article, Mrs. Saarinen told of a fascinating group of architects which met in New Canaan last year. Said Mrs. Saarinen:

"Like actors, when any two architects get together they are somewhat unrestrained in their evaluations of any given third. Examples of rather mild statements are: 'So-and-so is covering the country with a thick chocolate ooze,' or 'Not only can't So-and-so solve a corner, but he's the kind of man who—if you were trapped with him on a floe—would eat you before he was hungry.' It was astounding, therefore, when seven architects of the Middle Generation, including Bunshaft, Johnson, and Saarinen, decided mutually to get together to discuss each other's work.

". . . Press, wives, and tape recorders were barred. A Porsche, an M.G. and a Mercedes were neatly parked outside Johnson's glass house, where the conference was held. Inside was the usual complement of Brooks Brothers gray flannel suits and English tweeds. The floor was strewn with tracing paper, unwound like a Chinese scroll, as each valiantly described his current project. For a day and a half they tore into each other with the relentless candour of a bunch of teen-agers hashing each other's dates after a dance. 'What brutal critiques,' Johnson recalls, shuddering. 'I don't think any of us would want to go through that again.'"

There is a good deal more of sage, intimate comment in this *Vogue* article. It is worth looking up and reading in its entirety. But don't expect to catch the name of the cannabalistic architect on the ice floe. You have to fill that in for yourself.



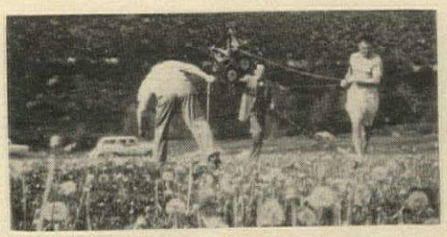
(RELAXATION)

If you're planning a regional meeting this fall in your professional group and have any fears that it may get bogged down in parliamentary procedure, include a bit of kite-flying. This was one of the brisk activities which kept Adrenalin coursing at the Aspen International Design Conference last summer:

Lew Tilley



Mr. Koichi Ito, of the Japanese Institute of Architects, prepares to launch a cupped wing kite, designed to catch the slightest breeze.



Edgardo Contini of Victor Gruen Associates, is pressed into service as a runner.

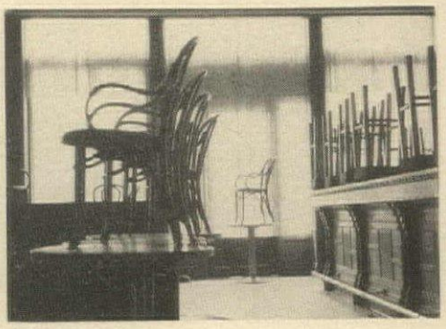


William de Mayo, collaborating designer on the Festival of Britain, adjusts cross sticks and "eyes" of his kite.



Will Burtin, New York graphic designer, holds the line in the distance to his kite.

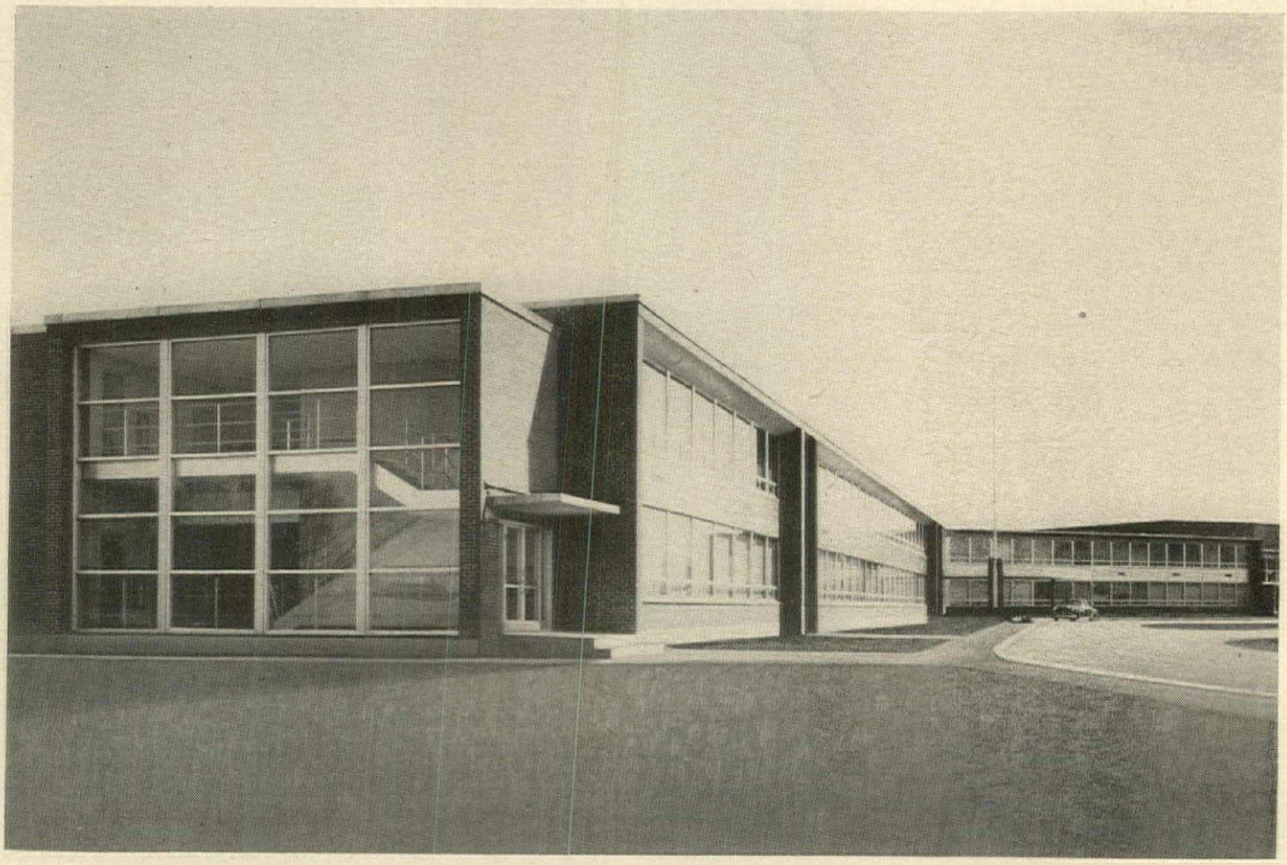
There were other social activities at the Design Conference, too. Below is a picture of the Hotel Jerome bar in the early morning. Echoes of the previous night's arguments about design still flutter the curtains.



(BUILDING)

When the steel scaffolding tower beside the new Socony-Mobil building on 42nd St. bent and slumped suddenly one hot day this

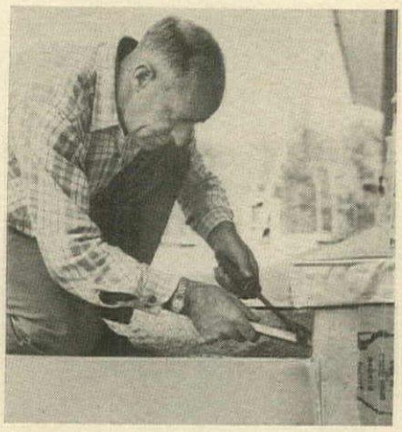
continued on p. 60



Coping, edging and gravel stops of the Burnt Hills-Ballston Lake Central High School are fabricated of long-lasting, corrosion-resisting Monel nickel-copper alloy. Architects: *Ryder & Link, Schenectady, N. Y.* Sheet Metal Contractor: *Henry A. Olsen, Inc., Poughkeepsie, N. Y.*

School gets rugged Monel roofing

...for low maintenance



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And its cost was comparable to that of another quality roofing metal they'd been considering!

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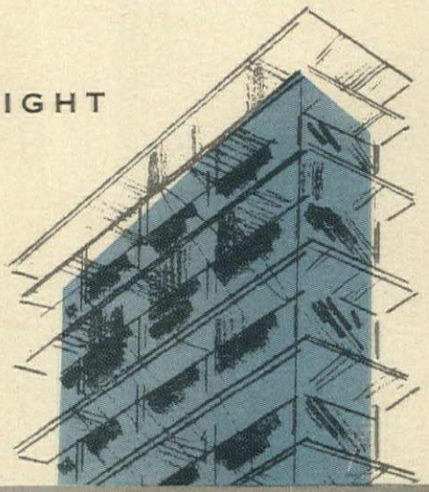
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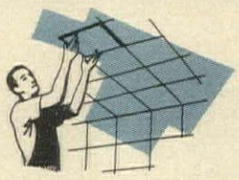
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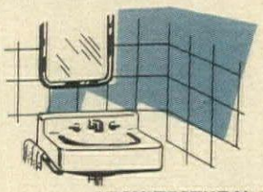




STRUCTURAL SIDING



CEILING PANELS

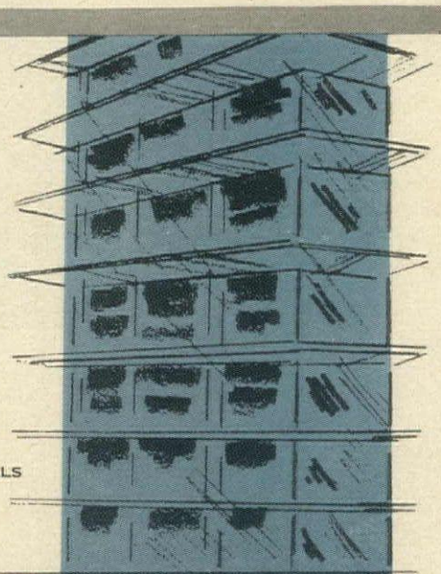


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This weather- and corrosion-resistant new finish is available in virtually any color and degree of surface gloss. It's lightfast, and resists abrasion, thermal shock, impact and flexing. Porcelain enameled aluminum eliminates prefabricating costs, too. Sheets of enameled aluminum can be drilled, sawed, sheared and punched on the job without exposure of the metal or progressive spalling.

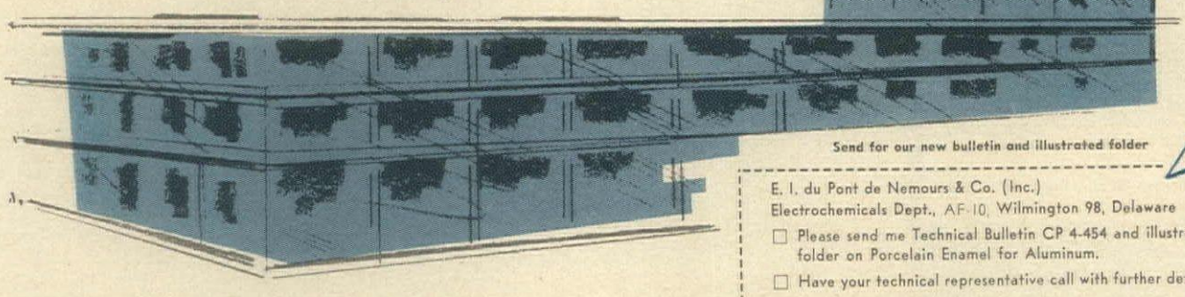
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☐ Have your technical representative call with further details.

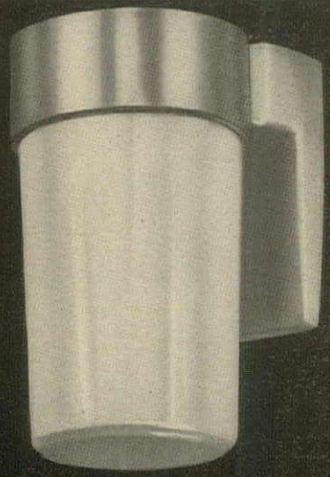
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City ..... State .....

design by mc Philben



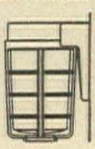
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PARENTHESES

continued from p. 57

summer, the New York City newspapers were glad to blame it on the generally torrid condition of New York. The true reason hasn't come out yet, and may never be known. However, one of our FORUM operatives did go over to 42nd and Lexington soon after the steel slump, drew a safety hat, and went up to see how things were doing on the bent 18th floor. It was a Saturday, and a crew was in place replacing the bent scaffolding with new. His report may not have much to do with the reasons for the minor catastrophe, but perhaps it is important in defining the way in which buildings get built, by people. It starts during a lull in the hot work, when the riggers were pulling their sleeves across their sweaty foreheads:



LIFE, *Hildegarde Sandhusen*

"Okay," rumbled the big boss who had come down from one of the higher floors, "get 'em something to drink. Beer or soft drink—whatever they want."

The foreman to whom he spoke stopped passing pipe out the 18th-floor window to seven or eight barebacked sweating men restructuring the bent scaffolding. They stopped working and looked in toward the window, a little more relaxed than they had been ten minutes earlier. Then, every time a pebble had plinked down, or a little whispering cascade of sand rustled down through the structure over them, they had started for the window. Neither the crew nor the cops watching apprehensively from the street had any real faith in the skeletal tower's ability to stay up while the bent members were being bolstered by straight ones. There were no other spectators; it was too hot.

The foreman pushed back his hardhat, wiped the sweat from his steel-rimmed glasses on the tail of his shirt, produced a

continued on p. 64

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Here's dramatic evidence that Olsonite's new Shock-Proof Seats can really take it! In the torture test shown here, a gigantic 48-inch Stilson wrench was used to pull half of the Olsonite Seat more than 12 inches out of line. The result? No cracks or fractures of any kind!



In addition to the regular bowl model (#5) and elongated bowl (#10), the amazing new Olsonite Shock-Proof industrial and commercial seats are available with a concealed check hinge (#5CC and #10CC) made entirely of non-corrosive metal. A lug on the hinge posts locks against cutaway on insert in extended seat back, preventing the seat from being raised to more than 11° beyond perpendicular.

A-4

NOW YOU CAN SPECIFY WHITE SEATS for all industrial and public toilet installations—white seats that won't fade or "yellow" for a lifetime of normal use!

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Olsonite's complete catalog is available on request. Please write on your letterhead to:

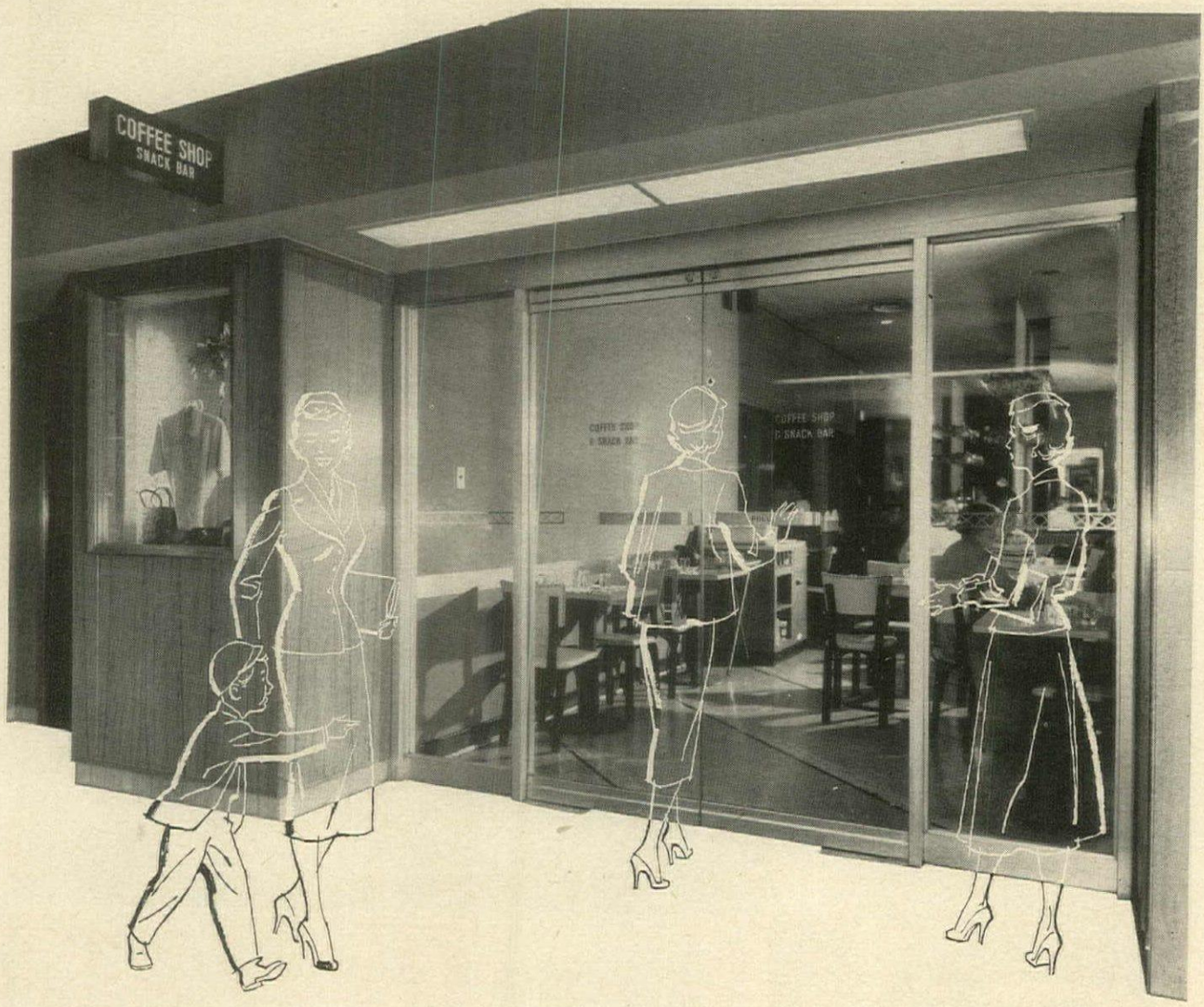
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Key elements in the installation are Kno-Draft High Pressure Air Diffusers. These permit use of smaller than ordinary ducts, yet provide *draftless* air distribution and equalized temperature throughout the area. Built-in sound baffles assure quiet air delivery.

Installation was done in quarter sections on each floor simultaneously. Thus, only minimum rearrangement of selling space was necessary.

Dropped ceilings cover half the depth of ducts, giving them a shallow beam appearance. The Kno-Draft High Pressure Air Diffusers themselves are easily and quickly attached to the ducts.

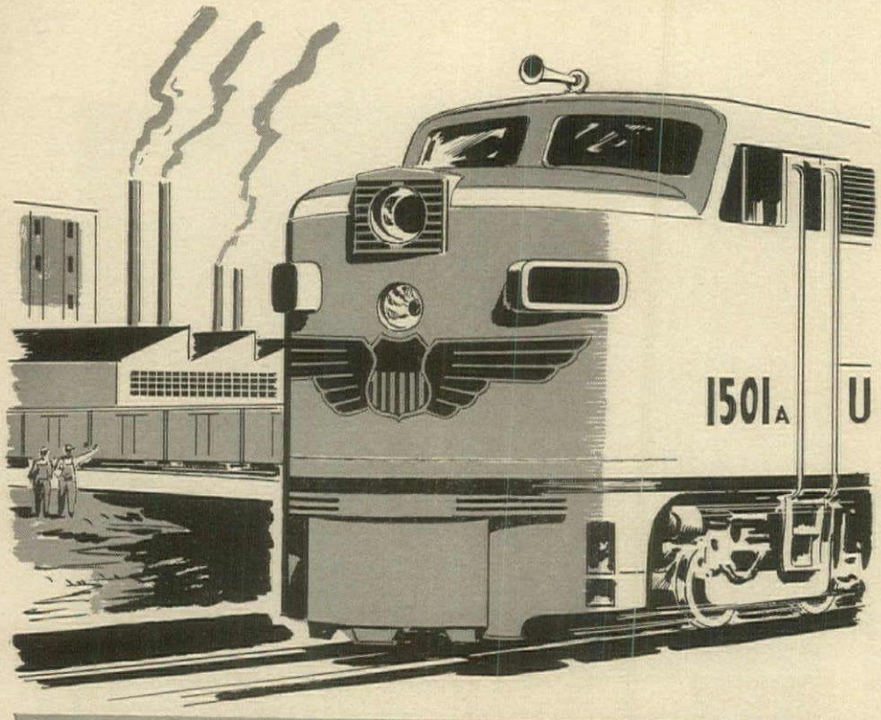
Kno-Draft High Pressure Air Diffusion is one of the newest and most efficient methods of air conditioning. Connor engineers have prepared an authoritative 48-page textbook on the subject. Write on your letterhead for a copy of Bulletin K-33. Connor Engineering Corporation, Dept. 0105, Danbury, Connecticut.

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movement
ESSENTIAL TO INDUSTRY

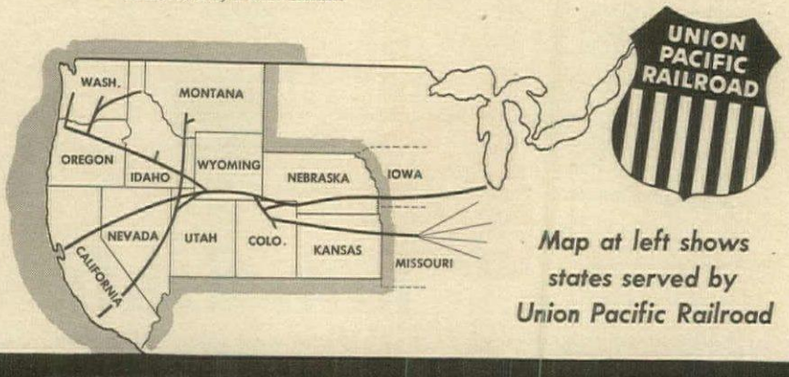
The nature of an industrial project determines its requirements but "*movement*" is always a big factor.

There's the *movement* of materials and equipment necessary for plant operation . . . the *movement* of unfinished products and of finished goods to markets . . . even the *movement* of executives on business and vacation trips.

So, in many ways, *movement* translated in terms of rail transportation, is very important when selecting an industrial site.

That's one reason why so many concerns have established plants in the "Union Pacific West" where the finest of rail service is conveniently available.

For complete and confidential information about available sites, see your nearest U. P. representative or contact Mr. W. H. Hulsizer, General Manager of Properties, Dept. 369, Union Pacific Railroad, Omaha 2, Nebraska.



UNION PACIFIC RAILROAD

Map at left shows states served by Union Pacific Railroad

UNION PACIFIC RAILROAD

PARENTHESES

continued from p. 60

damp scrap of white paper, wet the point of a short pencil on his tongue and started to make a list.

"Okay, Tony, what'll you have?"

"Beer, gimme beer." Tony looked proudly, and a little shyly, around the scaffold. The men were smiling; they were getting unexpected recognition from the boss.

"Mike?"

"Beer."

"Pete?"

"Root beer."

"Dave?"

And so it went, until the list was nearly complete. Then minds began to change, and for ten minutes the men wallowed in indecision. They changed and rechanged their orders, polling each other and staring off over the rooftops of the empty buildings across 41st St. while they reconsidered the choices. Sand and pebbles fell, but no one cared.

When the list was finished, Mike said, "Make mine a quart."

"You can't have a quart, Mike. You gotta take a can like everybody else. You want beer, you get a can; you want a soft drink, you get a bottle of root beer."

"No!" Mike was determined. "Gimme quart of beer."

"Look, Mike. Listen. Everybody else gets a can. You get a can."

"Look," said Mike, "put down 'Mike—quart of beer' like that. You know how to do that." And he wrote with his finger on invisible paper, showing the foreman how.

"I know how to do that, Mike. I got you down for a can just like everybody else."

Mike looked patiently up toward the sun for a few seconds. Then he argued, "Doc says I can't drink outa a can. Acid hurts my lips. I gotta use a bottle. Put me down for a quart, just like I told you."

One of the other men said, "Aw, come on, Mike. Let's get back to work." He was joined by the others, and Mike, helpless against the yammering, shrugged.

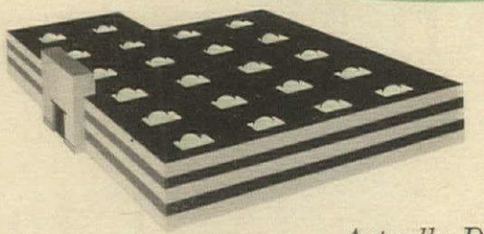
Then I left, picking my way over pipes and lumber, toward the temporary elevators.

It wasn't until the elevator was halfway down that I recognized a second passenger. He was Mike, and he had the beverage list in his hand. I watched him cross the street to the delicatessen, but I didn't bother wating for him to come back with six cans and one quart bottle of beer, and soft drinks, to sit in the hot sun on the scaffold planks 18 stories above the street, triumphant.

continued on p. 68

An Entirely New Concept . . .

A Brilliant Engineering Triumph In *Modern skylight design*



Consolite

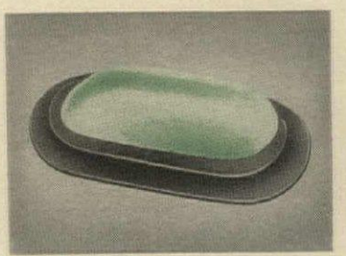
DOUBLE DOME SKYLIGHTS *

Actually Diffuses Light • No Condensation Drip
Greater Load Strength • Cleans with Rain • Leakproof

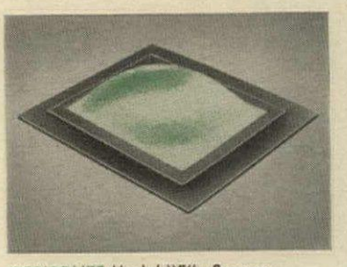
Available in SELF-FLASHING OR CURB MOUNTING MODELS



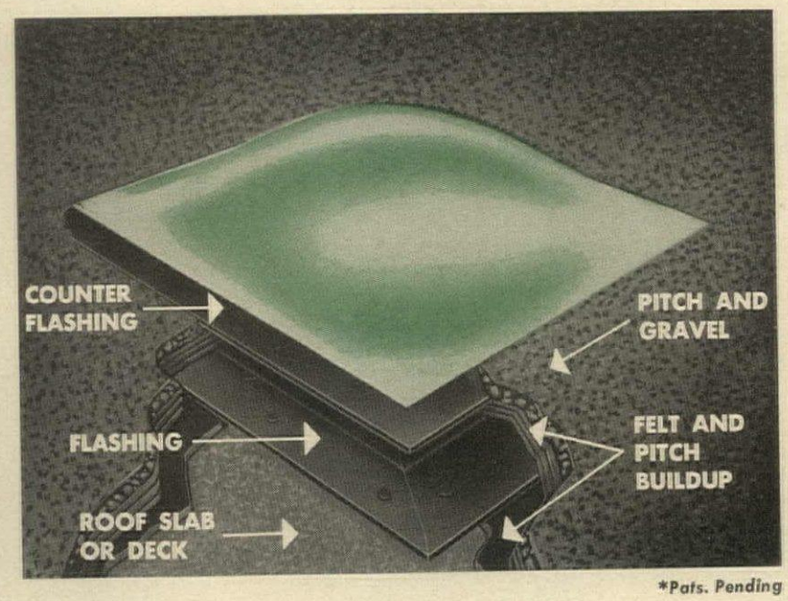
CONSOLITE *Model "A"—Round*
Available in 3 stock sizes — 18" x 6" — 24" x 7" and 36" x 9"!



CONSOLITE *Model "C"—Rectangular*
2 stock sizes—18" x 36" x 6"—18" x 72" x 6"! Custom sizes also available.



CONSOLITE *Model "E"—Square*
3 stock sizes — 18" x 5" — 24" x 6" — 36" x 7".



*Pats. Pending

Precision Formed Fiberglass Reinforced Polyester Plastics

LIGHTER IN WEIGHT—LOWER IN COST

Consolites offer the world's most advanced design in the first and only self-flashing Skylight. Built to withstand far more abuse than any other sky-light. The double dome prevents costly heat loss, and reduces air-conditioning costs because its insulation value is equal to 2½" Gypsum Roof.

Translucent Plastic actually admits 80% of the light of glass, yet blocks out 80% more solar heat than glass. And Consolites are so easy, so simple, so economical to install . . . require less handling, less cost, and less alteration in roof design.

THIS COUPON WILL BRING COMPLETE SPECIFICATIONS

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CONSOLIDATED GENERAL PRODUCTS, INC. AF-10
P.O. BOX 7425, HOUSTON 8, TEXAS (CONSOLITE DIVISION)

Gentlemen:
Please Rush us complete Set of Specification Forms and Literature.

Name.....

Address.....

City..... State.....

☐ Architect ☐ Contractor ☐ Builder

When All things are

...the better lighting



Louvers on Varsity units may be opened from either side to facilitate servicing.

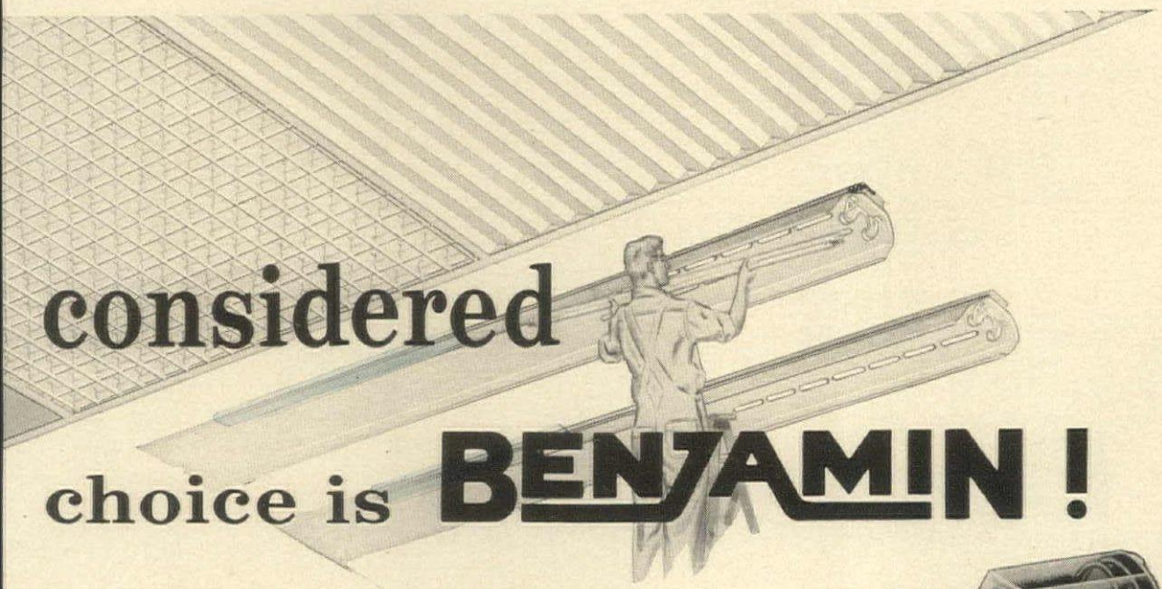
Benjamin translucent louvers are easy to keep clean by simply dipping in detergent-and-water solution.

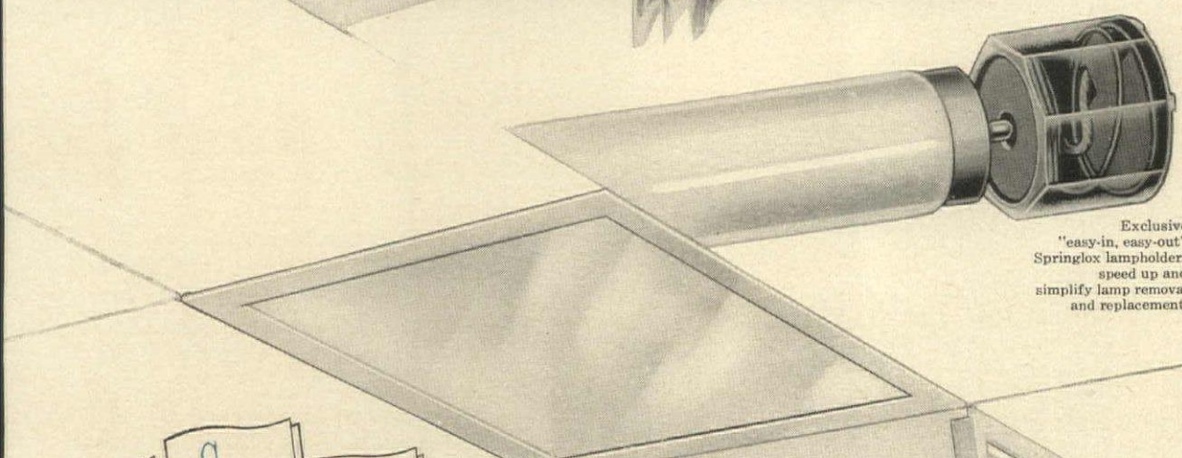
All these things considered...

1. Specific Units for Every Need
2. Precision Construction
3. Low Installation Cost
4. Minimum Maintenance Cost
5. Lowest Over-All Cost

make BENJAMIN the choice for better lighting!

considered choice is BENJAMIN !





Exclusive "easy-in, easy-out" Springlox lampholders speed up and simplify lamp removal and replacement.



Send for your FREE copy of one or all of these interesting lighting bulletins!

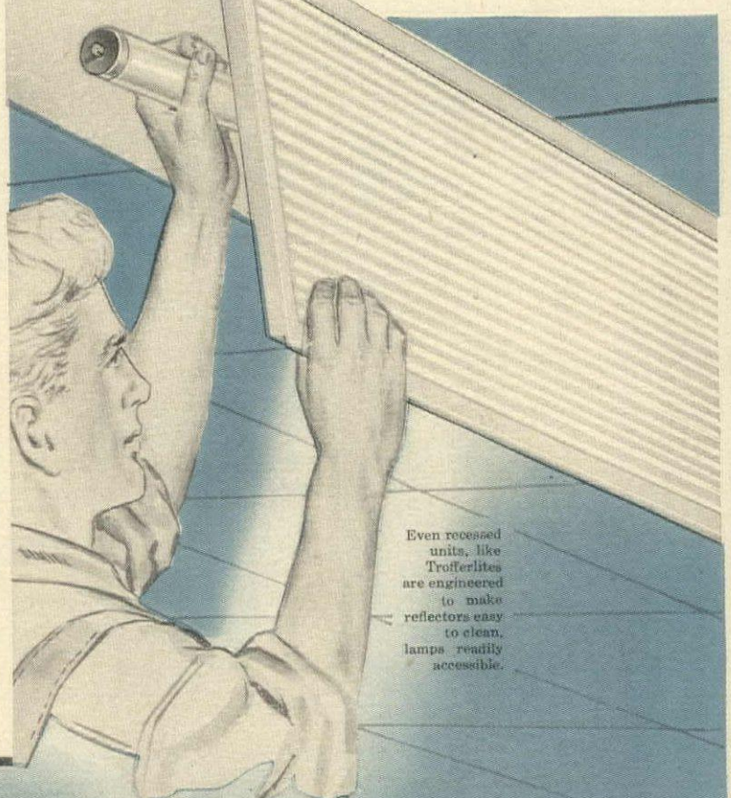
consider:

Minimum maintenance cost!

When you look into the maintenance features of Benjamin Line lighting units, you will find important cost-cutting advancements such as shown above. These features not only make sure that the lighting system will stand up year-after-year, but also that the cleaning, re-lamping and servicing operations can be performed at lowest possible cost. Such time and labor-saving features are typical of the entire Benjamin Line . . . they are another reason why Benjamin advises specifiers and buyers to consider *all* things when selecting lighting equipment. They prove that a few pennies more invested in Benjamin quality, returns many dollars in better performance at minimum maintenance cost.

Benjamin Electric Mfg. Co., Dept. YY, Des Plaines, Ill.

XB-1038



Even recessed units, like Trofferlites are engineered to make reflectors easy to clean, lamps readily accessible.

BENJAMIN TRADE MARK LIGHTING EQUIPMENT

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first evidence

. . . and lasting evidence . . .

OF MODERN DESIGN
AND SERVICE . . .



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DOOR OPENINGS

Extending hospitality to customer or patron at building entrance, or speeding service between kitchen and dining room, doors that open and close automatically build good will.

Include this functional and decorative feature in the next building you design. You'll earn the good will of *your* clients. Specify Stanley Magic Door Controls, of course . . . the *first*, and *finest*.

STANLEY *Magic Door* CONTROLS

Any door or combination of doors that swing, slide or fold can be operated by Stanley Magic Door Controls. Write for literature on Magic Eye* (photoelectric), Magic Carpet** and other Stanley Magic Door Controls such as the Stanley Underwriters'-approved explosion-proof Wall and Floor Button switches designed for hospital use. Complete automatic door service is available from your nearby Stanley Magic Door Representative.

REPRESENTATIVES IN PRINCIPAL CITIES

*U.S. PAT. NO. 2173455
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STANLEY TOOLS • STANLEY HARDWARE • STANLEY ELECTRIC TOOLS • STANLEY STEEL STRAPPING • STANLEY STEEL

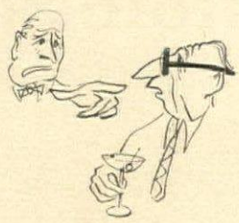
PARENTHESES

continued from p. 64

(FRIENDSHIP)

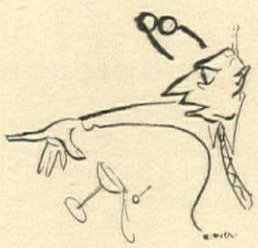
Lawyers complain that they are assailed constantly with requests for free advice from friends. Doctors too are famous targets for friendly locker-room conversations beginning: "I seem to have this thing on my foot, Doc, . . ."

This hot summer may also have been a record period for architects' friends to have buttonholed them querulously for ad-



vice: "Look, you're an architect, Joe, I've bought this air conditioner for my bedroom, and now they say I'm going to have to rewire the whole damned house to use it. What about that? You're an architect . . .?"

That belligerent identification can preface any question, from *what is the shortest route to the men's room*, to *why did the new drapes shrink in the washer*—and even more interesting questions. By now there are some architects who, when they hear anyone begin belligerently, "You're an architect, . . ." immediately stand up



and shout, "And you're an SOB!"

But perhaps it is unwise to leap up and shout. After all, the inquiring friend may someday slip and become a bona-fide check-slinging client, so he should not be frightened away. The best reaction may instead be simple, sincere sympathy. Drop a warm tear, then try to cheer things up again by quoting this news story from a recent issue of *Air Conditioning & Refrigeration News:*

"Denver—The Public Service Co., Denver electric utility, recently installed 160 air-conditioning units in its ten-story building. When the units were started up, fuses began to pop.

"Inadequate wiring."—W. McQ.

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UNDER FLOOR WIRING SYSTEM



A Nepcoduct specification *now* eliminates costly electrical alterations later

. . . that's why more and more cost conscious architects are specifying Nepcoduct Electrical Underfloor Raceway Systems.

Nepcoduct provides for expansion of electrical service wherever and whenever it's needed . . . without the expense of routing concrete or cutting building structure . . . without interrupting business routine.

And National Electric Nepcoduct fits any type of floor construction. It's available as a single-, double-, or triple-duct system for power and light, communication and telephone. Outlets have a wide radius sweep for easy pulling of large telephone cables. The cost of electrical extensions and maintenance is reduced through easy accessibility of all electric services in one junction box through a common handhole opening.

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A short survey of today's

RELATIVE COSTS OF RESILIENT FLOORS

Today's resilient floors are available in a wide range of price categories. Generally speaking, their cost depends on two factors. First, the price of the flooring material itself, and second, the many considerations frequently involved in installing the floor.

Material costs vary. The chart on the opposite page shows the installed cost ranges of the different types of resilient flooring materials. Asphalt tile is the lowest in cost, with the "A" or darker colors the most economical. The most expensive—and lighter—"D" colors of asphalt tile are about equal in cost to the lighter gauges of linoleum. Further up the price scale are Excelon Tile, standard and heavy gauges of linoleum, Corlon vinyl-plastic sheet flooring, cork tile, rubber tile, Linotile, and Custom Corlon Tile, in that general order. Differences in gauge, color, and styling within a resilient flooring line all have a bearing on cost.

Other factors influence final cost. In addition to the price of the material itself, other considerations which may have a bearing on the cost of installation affect the final cost of a floor. For this reason, the Armstrong Cork Company, as manufacturers of resilient floors of every type, cannot safely quote precise installed prices. Those listed opposite are therefore approximate.

The condition of the subfloor is often an important consideration. In addition, labor rates and efficiencies vary greatly from one section of the country to another, as well as from job to job. Naturally, too, costs of resilient floors differ widely depending upon the amount of custom styling involved in the installation. A floor laid wall to wall in a single color or styling is generally less costly than a complex custom styled floor requiring exceptional craftsmanship and fine attention to detail on the job.

Bids from flooring contractors. An outright specification for Armstrong material will still insure competitive bidding inasmuch as the Armstrong Line of floors is available to most legitimate flooring contractors. Furthermore, it will assure your client of top-quality materials. The invitation to bid should indicate all the items which fall within the scope of the flooring contractor's work in addition to the flooring materials themselves. The sub-contractor's ability and reputation should then be considered by the architect or the client in determining the best value.

When fairly accurate costs are required prior to receiving bids, it is suggested that you call on your Armstrong representative for assistance. By determining the various factors involved, he can help you work out an approximate cost of the proposed flooring that will be accurate enough for estimating purposes.

Floor designs can be effective without increasing the cost of the installation. This floor of Armstrong Rubber Tile is an example. Three colors were used in a simple diagonal design.



Elaborate custom styling such as in this floor of Armstrong Linoleum requires intricate cutting and fitting. The labor involved can add considerably to the cost of the installation.



Armstrong FLOORS

LINOLEUM PLAIN, JASPÉ, SPATTER®, TEXTELLE*, DECORAY*, RAYBELLE®, ROYELLE®, MARBELLE®, NEWRAY* INLAID, CRAFTLINE® INLAID, EMBOSSED INLAID, STRAIGHT LINE INLAID

Approximate installed prices per square foot

(Over concrete, minimum area 1000 square feet)

Asphalt Tile, 1/8"—Group A, Group B Linoleum, light gauge—Marbelle, Decoray Asphalt Tile, 3/16"—Group A Asphalt Tile, 1/8"—Group C Asphalt Tile, 3/16"—Group B Linoleum, light gauge—Newray Asphalt Tile, 1/8"—Group D	20¢ to 35¢
Linoleum, standard gauge—Plain, Jaspé, Raybelle, Royelle, Marbelle Asphalt Tile, 3/16"—Group C Excelon Tile, service gauge Linoleum Tile, standard gauge Linoleum, standard gauge—Craftline, Straight Line, Embossed, and Plain (Special Colors) Battleship Linoleum, 1/8" Greaseproof Asphalt Tile, 1/8" Asphalt Tile, 3/16"—Group D	35¢ to 45¢
Corlon—Terrazzo, Decoresq, Moresq Linoleum, 1/8"—Marbelle, Jaspé Linoleum, 1/8"—Textelle Linoleum, 1/8"—Plain (Special Colors) Cork Tile, 1/8" Excelon Tile, 1/8"	45¢ to 60¢
Corlon—Granette Rubber Tile, 1/8" Cork Tile, 3/16" Linotile, 1/8"	60¢ to 70¢
Flagstone Asphalt Tile, 1/8" Custom Corlon Tile, 3/32" Cork Tile, 5/16" Rubber Tile, 3/16" Custom Corlon Tile, 1/8"	70¢ to 90¢
Top-Set Asphalt Cove Base, 4" and 6" Top-Set Rubber Cove Base, 4" and 6"	35¢ to 50¢ per lineal foot

ARMSTRONG CORK COMPANY makes all types of resilient floors for all types of interiors. Almost any flooring problem can be met with one or more of the floors in the Armstrong Line. As a result, we have no special bias toward any one type and can offer architects impartial recommendations on any flooring problem. Our main interest is to aid you in making a sound selection.

Armstrong sales representatives throughout the country will be glad to consult with architects and make specific recommendations for individual jobs. Your Armstrong representative has a wide variety of experience and training in resilient flooring and can also call upon the Armstrong Research and Development Center for assistance with special problems.

For helpful information on any flooring question, just call your nearest Armstrong District Office or write direct to Armstrong Cork Company, Floor Division, Lancaster, Pa.

PLASTICS

CUSTOM CORLON® TILE
EXCELON® TILE
MORESQ* CORLON
DECORESQ® CORLON
GRANETTE® CORLON
TERRAZZO* CORLON

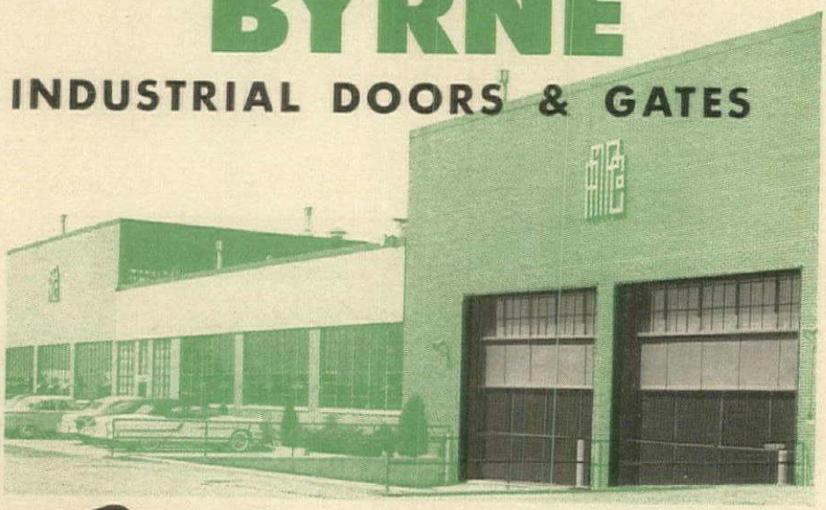
RESILIENT TILES

ASPHALT TILE
Standard
Greaseproof
Flagstone*
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RUBBER TILE
LINOTILE®
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BYRNE

INDUSTRIAL DOORS & GATES



Combined

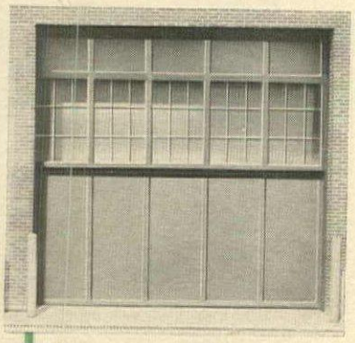
Architects—Bransford & Nichols
Gen'l Contr.—Forcum-James Co.

FOR GREATER PLANT SECURITY

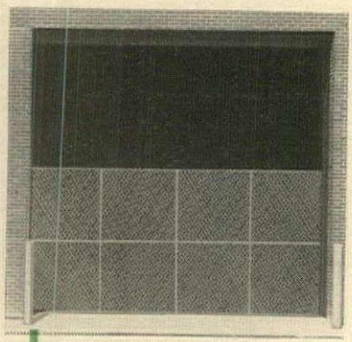
A unique and extremely practical installation of doors and gates is found in the new plant of American Metal Products Company, Union City, Tenn.

Basically, the design called for two Byrne vertical lift doors of two-leaf construction and 20 feet by 18 feet in size. However, when these doors are opened, wire mesh gates, directly behind the doors and half the height of the opening, serve to prohibit access to the plant. The gates are of single-leaf vertical lift design, operating on the same motorized principle as the doors.

Byrne's specialized engineering experience and extensive manufacturing facilities offer you the exact solution to innumerable closure requirements . . . both in industrial and aircraft structures.



Byrne Vertical Lift Doors in closed position.



Security gate in closed position after doors have been raised.

***Write** for the Byrne catalog containing complete information on standard and custom doors. Or refer to it in Sweet's.*

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Dept. f-12

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Cafritz Bldg., Washington 6, D.C.

LETTERS

Air Academy brawl

Forum:

In your report of the Air Force Academy "brawl" (AF, Aug. '55), why do you go to such lengths to give support to the commercial firm of Skidmore, Owings & Merrill? Why not print what Frank Lloyd Wright had to say on the subject of the Academy? Why imply that the great architect's criticism arose from personal bitterness? The criticism as I have heard it was appropriate. I have found no local architect who fails to agree with Mr. Wright's criticism.

CHARLES MONTOOTH, *architect*
Scottsdale, Ariz.

Forum:

Americans who have come to recognize the interest from those in other countries in their internal political affairs have probably now come to accept resignedly our equal interest in your cultural and artistic affairs. Therefore, I will be forgiven if I express my surprise and concern at the most unfortunate melodrama which attended the unveiling of the plans of the new Air Force Academy (AF, Aug. '55).

We recognize that the finest contemporary architecture in the world today, Brazil not excepted, is being produced within the borders of the US. The man to whom most is owed for establishing the design revolution is, of course, Mr. Frank Lloyd Wright. But just as his genius was recognized first beyond the confines of your country, many of us non-Americans have been the first to notice with increased disappointment for some years now the decline of the man, who, while originally the prophet, might have been the elder statesman not just of one segment of the contemporary group, but of the whole movement.

The deterioration first exposed in the architecture is now all the more clearly evident in the most recent utterances of Mr. Wright. Many of us non-American architects know that Americans will reject shortly the vindictiveness and pettiness of the very senior architect from Wisconsin just as surely as they have of the junior senator from Wisconsin.

Far from viewing them as "plan factories" we regard the work of such firms as Skidmore, Owings & Merrill as making a genuinely important contribution not only to American architecture but to that of the entire world. The specific nature of the organization which creates architecture is not the important thing, but the architecture produced. In fact, nothing could be more specifically American than the approach to "group practice" carried on by the Skidmore firm.

If we cannot come to terms here on our continent in accepting the universal forces now shaping the architecture of our whole

continued on p. 76

4 studies of the effective use of PORCELPANELS in schools

Representative Schools Using Ing-Rich Porcelpanels

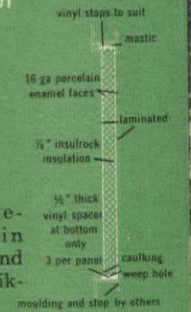
COLLEGES
- Kent State University
- Kansas State Teachers
- St. Xavier (Illinois)

HIGH SCHOOLS
- Carlisle, Pa.
- Luthern (Milwaukee)
- Old Saybrook (Conn.)
- Passaic, N. J.
- Woodstock, Illinois
- Hollidaysburg, Pa.
- Lincoln (Gainesville, Fla.)
- Pontiac, Mich.

GRADE SCHOOLS
- Green Township, Pa.
- Maumee, Ohio
- Assumption (Fairfield, Conn.)
- Lakeland, Minn.
- Illiopolis, Illinois
- Cerro Gordo (Macon, Ga.)
- Nativity (Dubuque, Iowa)
- St. Brenden's (Detroit)
- Oliver Wendell Holmes (Dallas)

Write for latest data on Ing-Rich Porcelpanels for Schools

Porcelain Enamel for exterior and interior

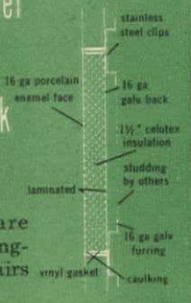


Insulated double-faced panels—in blue, green, aqua and black—create striking color effects.

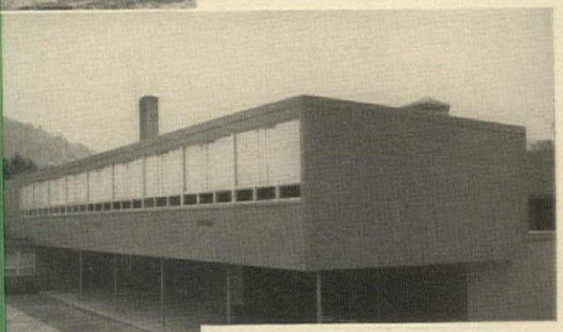


At Paoli, Pa. High School, the design allows many individual panels to serve as both exterior and interior wall surfaces.

Porcelain Enamel face and paint grip back



Over 5,000 square feet erected by Ing-Rich on steel chairs and steel furring.

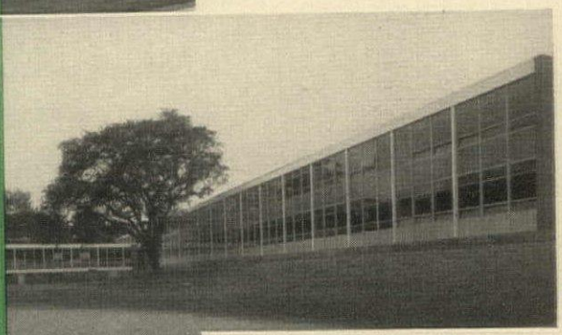


Ing-Rich Porcelpanels were used for coping and exterior walls at Freeport, Pa. High School.

Truscon type panel with Porcelain Enameled face

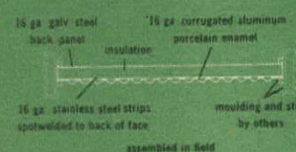


This panel design features an air space between the porcelain enameled face and the insulation.



For the Eastern Junior High School, Riverside, Connecticut, Ing-Rich fabricated Truscon type panels.

Porcelain Enameled Aluminum



This is believed the first architectural use of corrugated porcelain enameled aluminum.

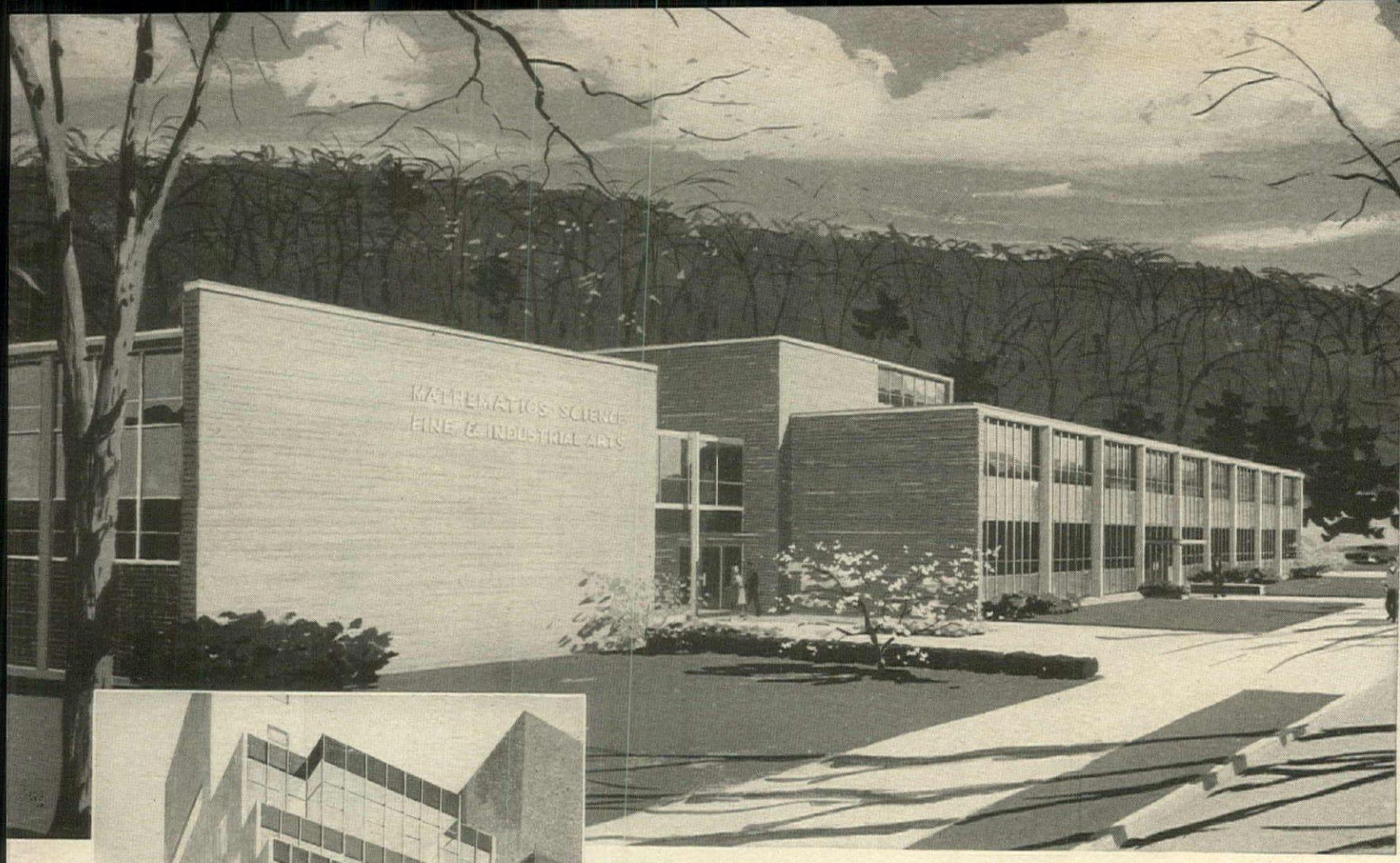


At New Jersey State Teacher's College in Trenton, corrugated porcelain enameled aluminum is used above and below windows.

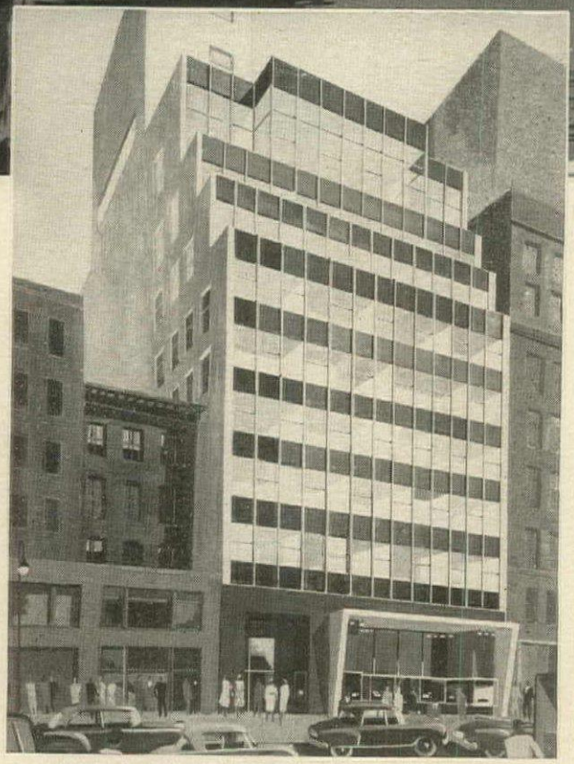
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NEW JERSEY STATE TEACHERS' COLLEGE, MONTCLAIR, N. J. (2 bldgs.) Architect: Emil Schmidlin. Contractor: Martin Infante Co., Inc., Lodi, N. J. Lupton Curtain-Wall System, Type H. Width modules 3'9" & 4'1". Fixed glass and projected-in ventilators. Opaque areas are ⅛" thick embossed, fluted aluminum, Alumilited. Special features: Heavy aluminum sub-frames and door frames.



FIFTH AVENUE DIAMOND CLUB, NEW YORK CITY. Architects: Sylvan Bien & Robert L. Bien. Contractors: Kayfield Construction Corp. Lupton Curtain-Wall System Type H. Width Modules: 3'7" and 3'4". Ventilators: Project out for window cleaning only. ¼ Plate Glass. Facing Material: ⅛" aluminum plate, Alumilited. 6" back up wall with air conditioning unit.

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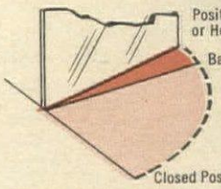


Diagram shows how door is controlled as it opens. Accidental openings are eliminated . . . as are accidental hold-opens. The control also cushions the closing of door.

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- POSITIVE BACK STOP
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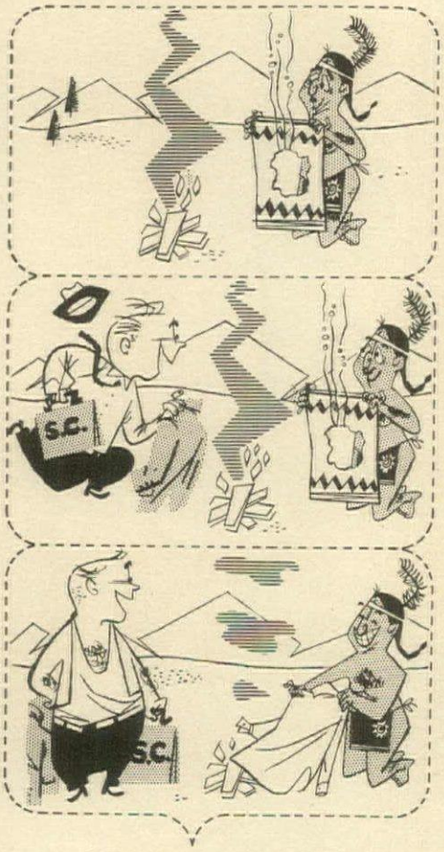
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LETTERS

Continued from p. 72

Western civilization, we have little hope for agreement on the broader economic-political level. Good architecture should not recognize political boundaries.

JOHN C. PARKIN, *architect*
Toronto, Ont.

Forum:

The pitiful arguments raised in protest to the Air Academy have been as a buzzing of a mosquito at my ear.

The noted Frank Lloyd Wright has for once taken on more than his antiquated mind can bear. His comments about the advisors to the design of the Air Academy are, I feel, the rantings of an old man.

The necessity for redesigning the Air Academy to provide an architectural samples bureau for the various states seems a sad commentary on our democracy, when individual interests rise above service to the public.

The design as presented by Skidmore, Owings & Merrill is to my way of thinking the best example of the architecture of our era in our country. How, as stated in your article (AF, Aug. '55), they can eliminate 80 to 90% of the glass without making the Academy look like a penal institution would be a trick I would like to see.

Why hasn't FORUM entered into this controversy by inviting comments from the members of our profession to see exactly what architects at large feel about the Academy?

The primary objection I have to the entire Academy affair is that since it is an Air Academy for a democratic country, an open competition, or one by invitation, should have been conducted, and the winning solution built. It will be many, many years before another project of this scope is built and the profession at large should have been given an opportunity to submit their thinkng on how an Air Academy for the US Air Force should be designed.

E. ABRABEN, *designer*
Fort Lauderdale, Fla.

• FORUM devoted its available space to giving the only full account of the episode that appeared anywhere FORUM readers have a standing invitation to submit their comments for publication in this department.—ED.

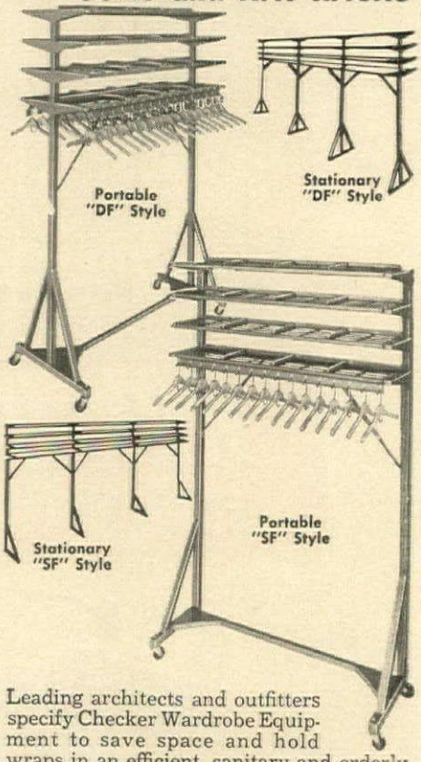
Forum:

Congratulations on opening your pages to a discussion of the controversy over the Air Force Academy design.

I am amazed, however, to find myself plunged by your news column into a web of Washington intrigue. Even more, to discover that I testified before a congressional subcommittee to advertise a recent book of mine. This is a ridiculous falsehood. And to learn that I am "an old enemy of glass-and-metal construction"! How ridiculous can you be? Who can be an enemy of "construction"? It is quite possible to be an enemy of bad architec-

continued on p. 80

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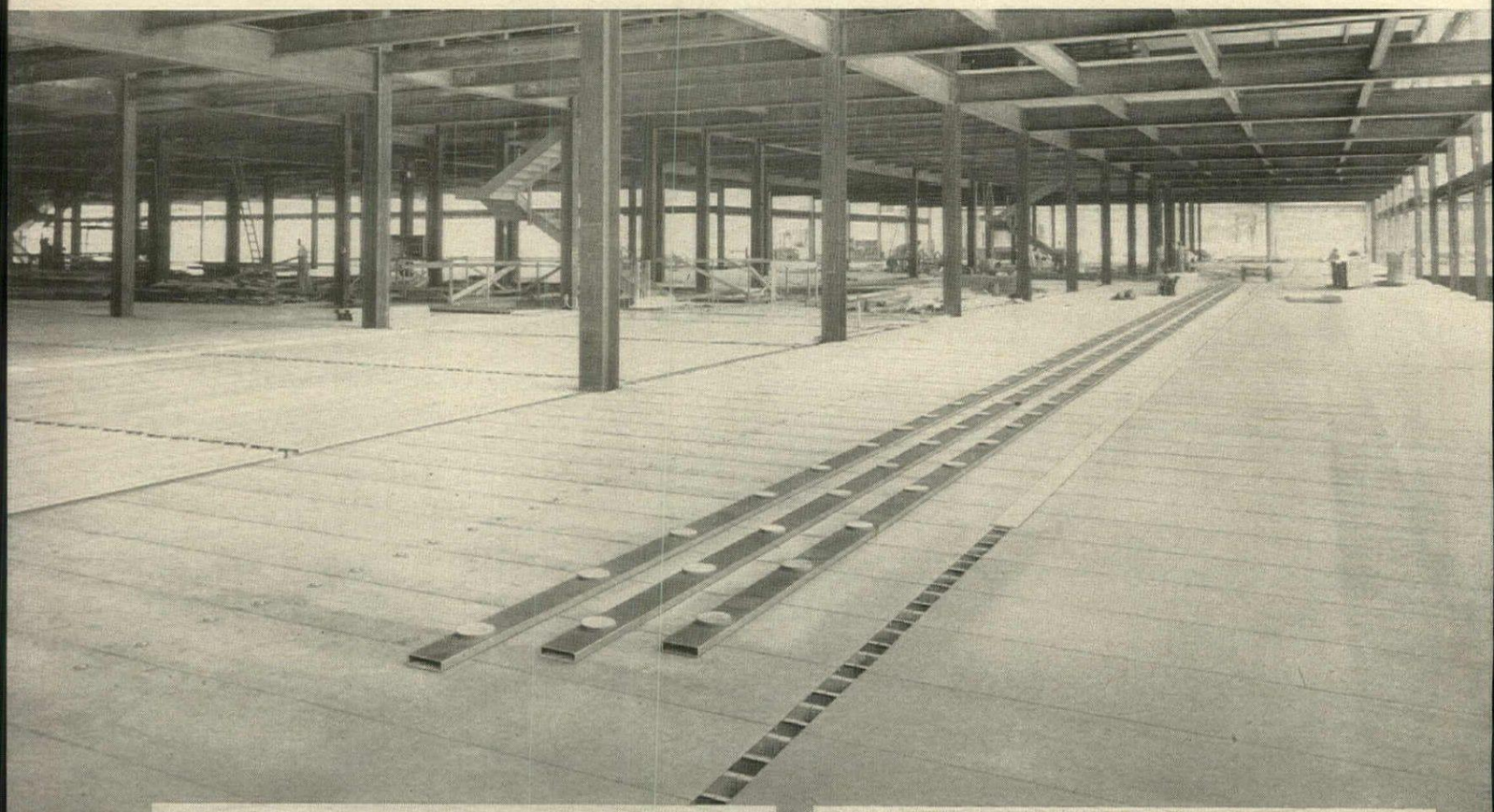
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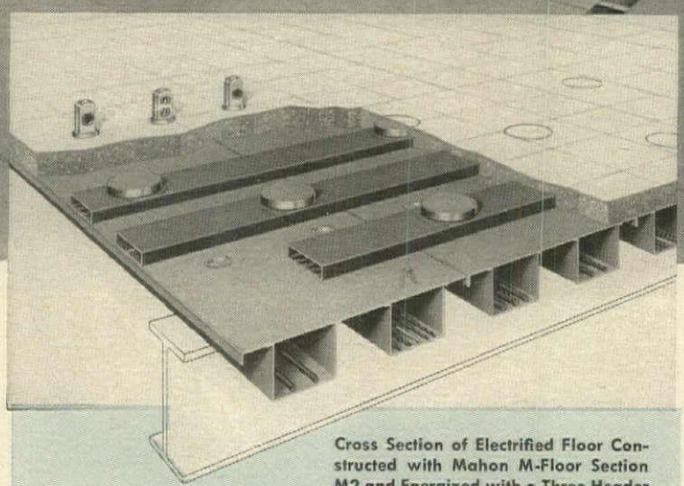
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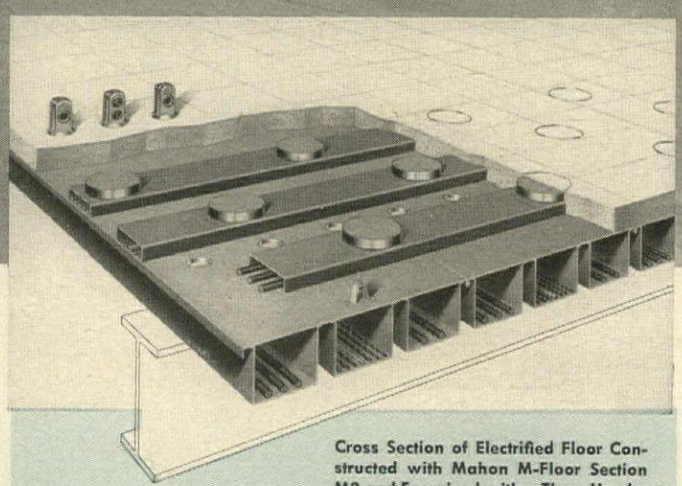
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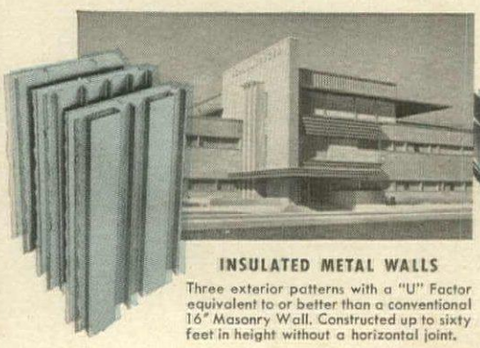




Cross Section of Electrified Floor Constructed with Mahon M-Floor Section M2 and Energized with a Three Header Duct Electrical Distribution System.

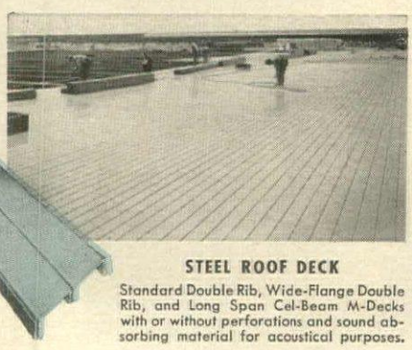


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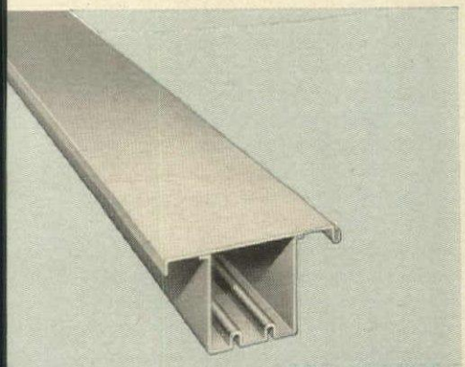


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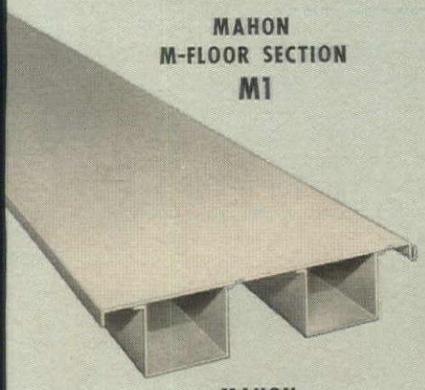
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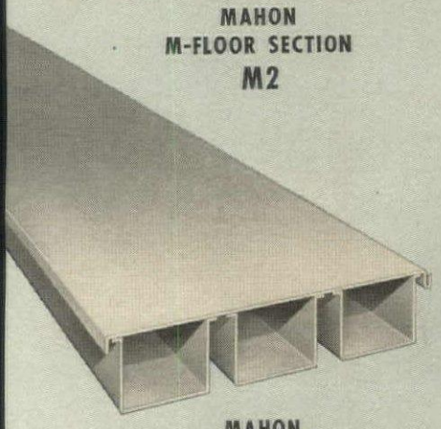
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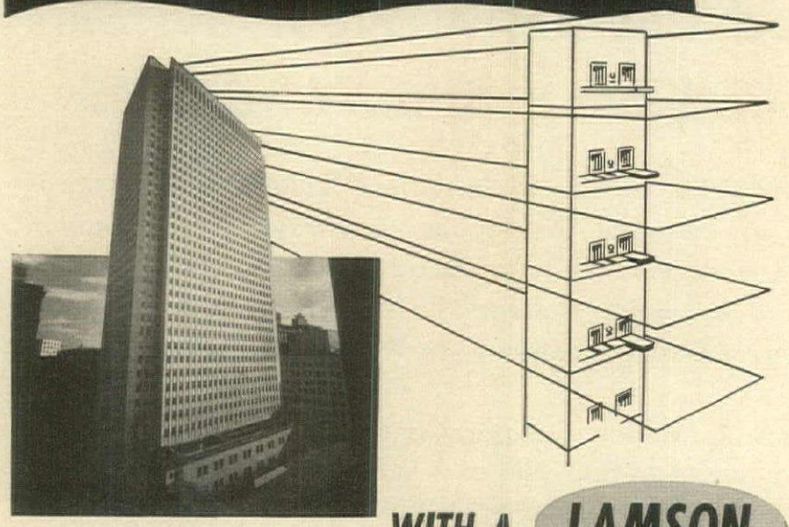
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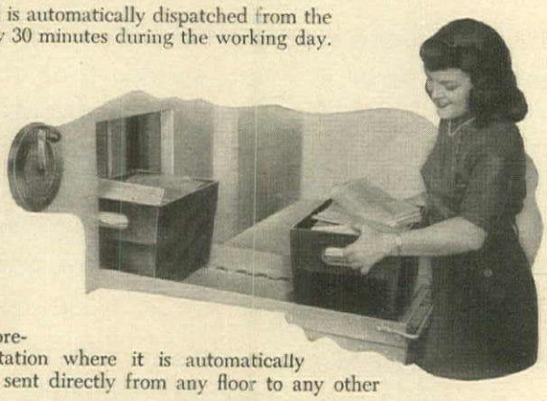
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LETTERS

Continued from p. 76

ture, and that is what I testified against in Washington.

The Air Force Academy, as planned, violates three architectural precepts:

1. The "competition" was peculiar to say the least.

2. The principle of artistic collaboration, adhered to in many of our best *public* competitions, was ignored. Surely it should be considered essential in a project of lasting national significance to bring in city planners, landscape architects, sculptors and painters in the early stages of the design. Not even lip service was given to these important professions. No wonder there was criticism of the design!

3. The architecture should be an architecture in which every American felt that he had made a contribution. The architecture should be the most magnificent this nation can produce—instead of something which barely achieves the level of a big hotel deal. The heart of every American should be moved by the design.

It is unfortunate that you did not quote from the transcript of the hearings, giving some of the opinions of your opposition (for you are clearly biased in favor of Skidmore, Owings & Merrill). You did not quote Frank Lloyd Wright's praise of Richard Morris Hunt. Not that I am defending Wright; his design would have been no better. It is only that some people think we should have standards for our national shrines, even in a day which glories in having none.

HENRY H. REED JR.
Cambridge, Mass.

• FORUM stands behind its assertion that Reader Reed "told FORUM he was equally interested in plugging a new book, of which he is coauthor."—ED.

Forum:

I have read the official statement by the AIA endorsing the selection of the architects for the Air Force Academy plans. This statement is excellent and proper.

It now seems to me that the AIA should issue a statement indicating that it does not condone public criticism of member's work, by other members of the AIA. I am referring specifically to remarks made by Frank Lloyd Wright on the Air Force Academy design.

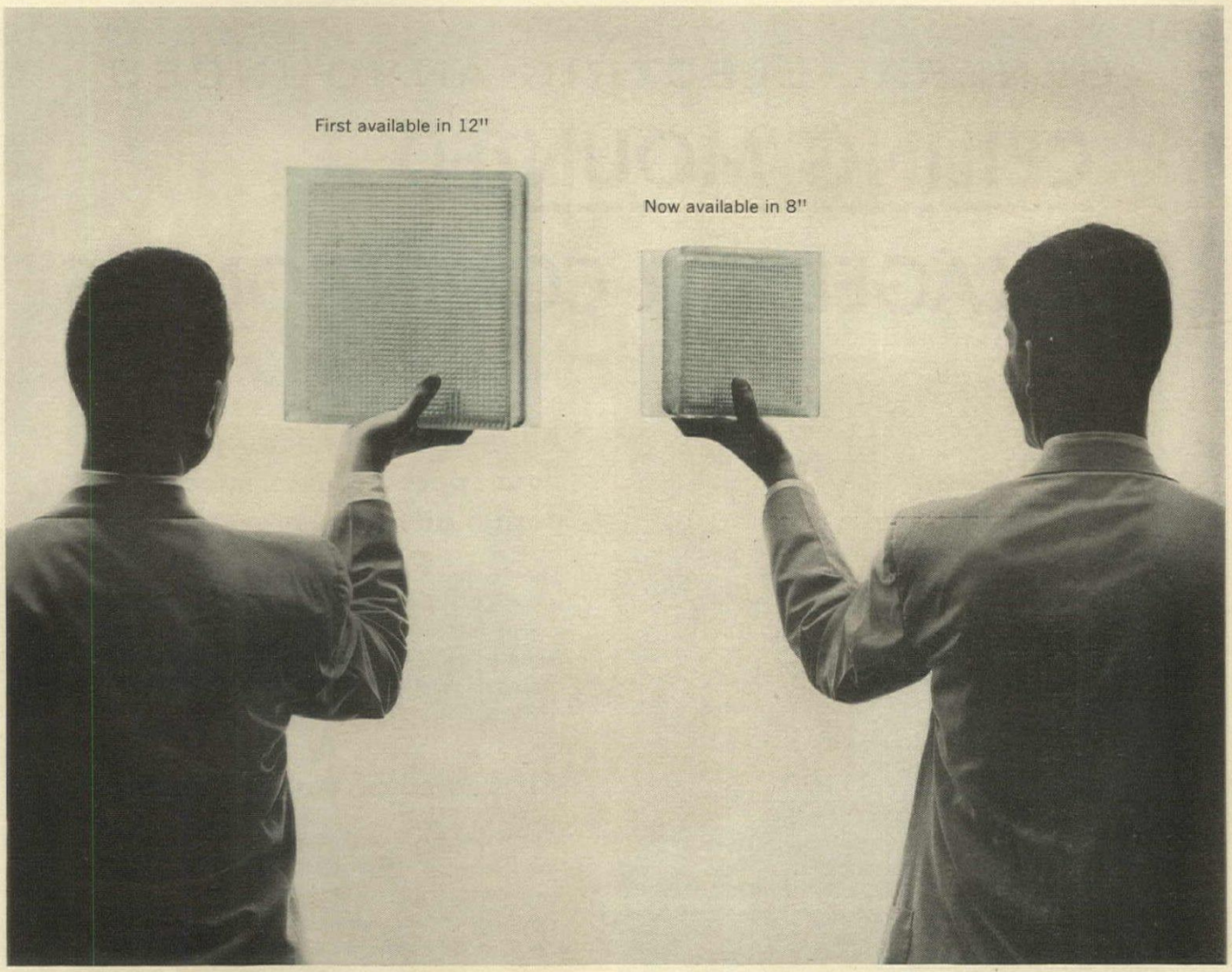
This type of criticism gives a bad impression to the general public and is harmful to the profession as a whole. Those of us who are acquainted with Mr. Wright and his adverse reaction to any architecture but his own don't take his remarks too seriously, but unfortunately the public is not so understanding.

O. KLINE FULMER
Fulmer & Bowers, architects
Princeton, N.J.

Forum:

The "Air Academy Design Brawl" pre-

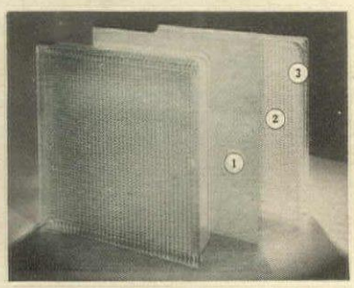
continued on p. 84



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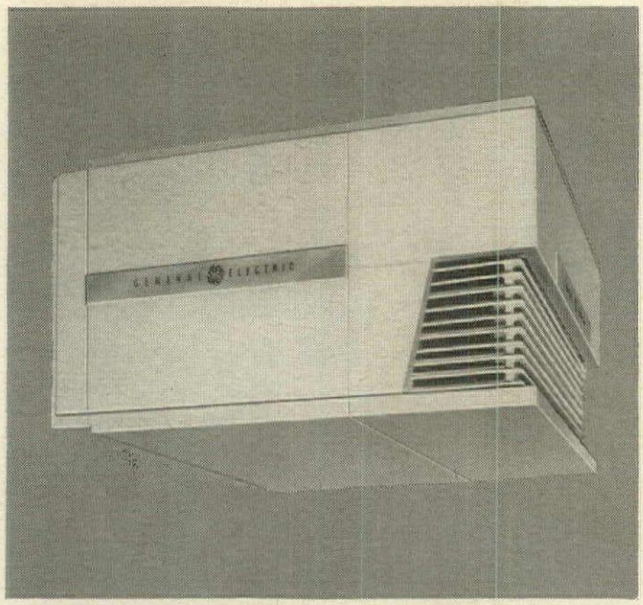
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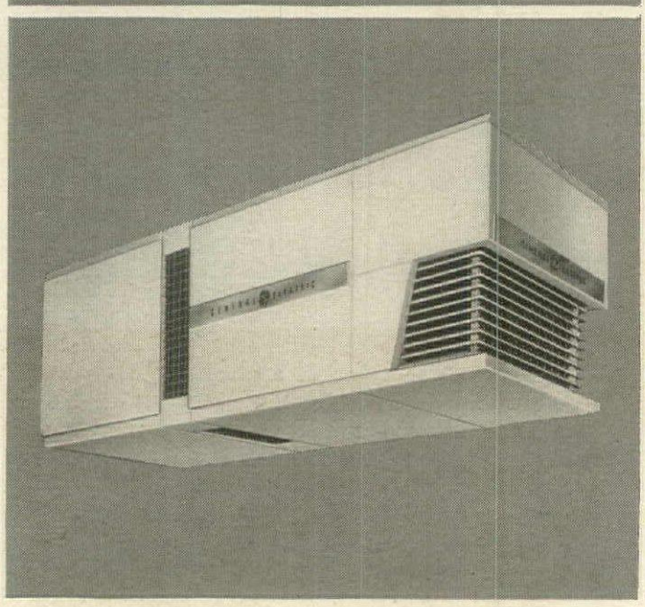
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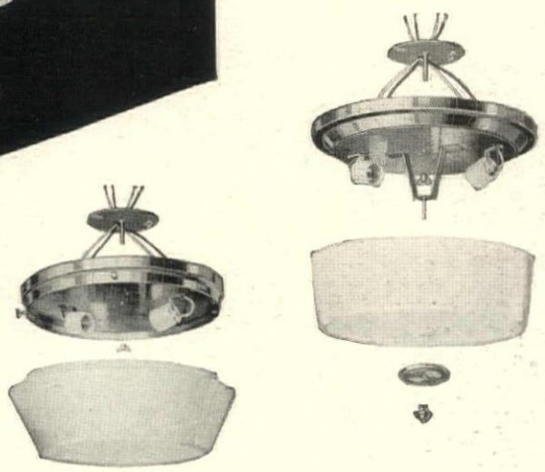
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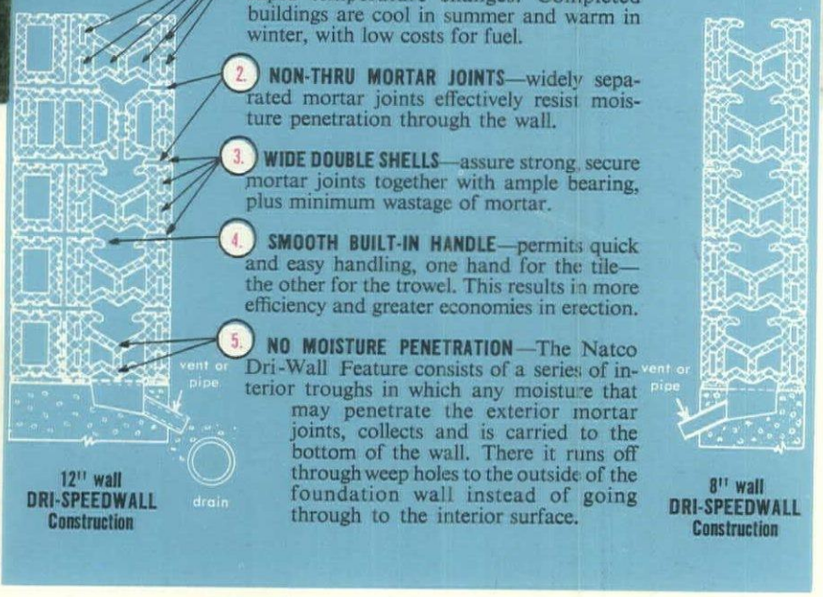
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The trim lines and finish of Natco Dri-Speedwall Tile lend a touch of rugged beauty to the exterior walls of National Biscuit Company's large Chicago plant. In selecting Natco Dri-Speedwall Tile for the building exterior, National Biscuit Company followed the example of owners of many public utilities, industrial, commercial and multiple housing construction units throughout the country.

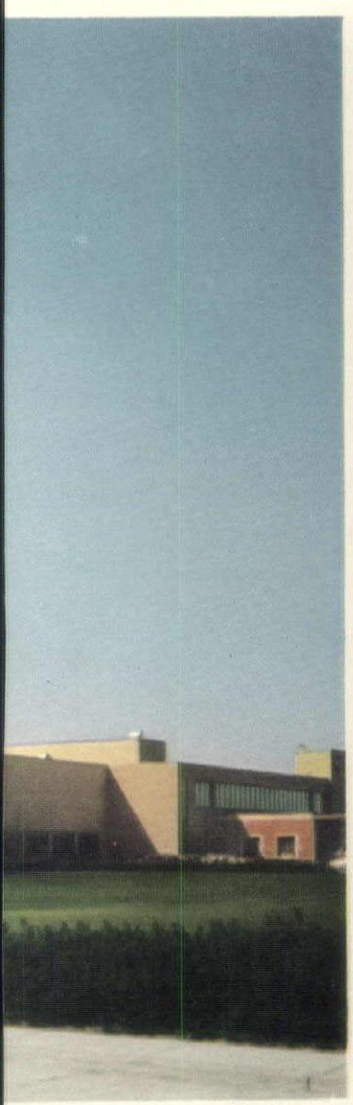
Natco Dri-Speedwall Tile makes strong, attractive, load-bearing walls. The exclusive "Natco Dri-Wall" feature assures a cool interior in summer, a warm interior in winter, a dry interior always. Natco Dri-Speedwall Tile is available in three attractive finishes—buff, manganese spot, and red textured. Nominal face size—5⅓" x 12", nominal width—8".

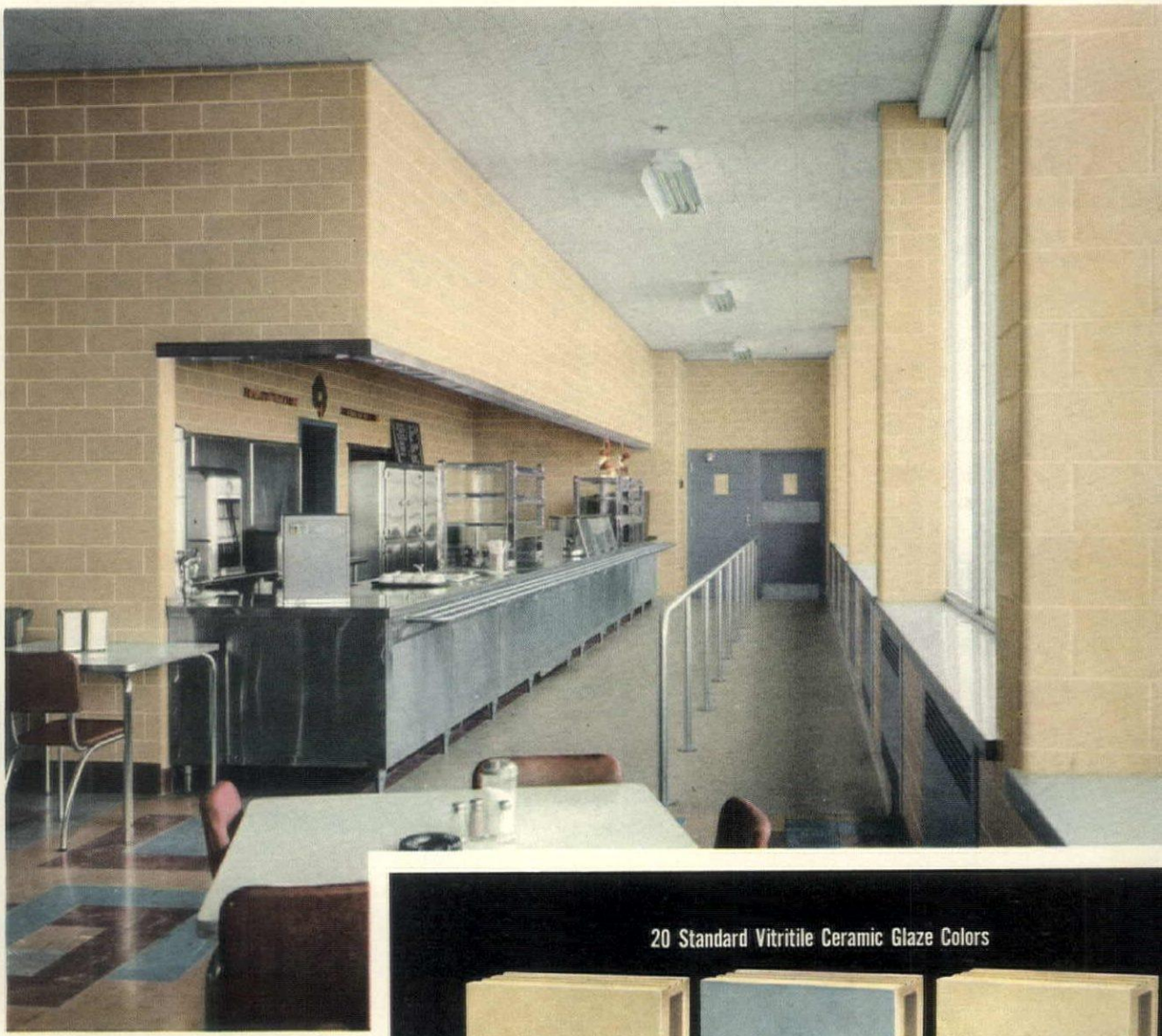
FIREPROOF · LOAD-BEARING · MAINTENANCE-FREE · PERMANENTLY BEAUTIFUL

NATCO STRUCTURAL CLAY PRODUCTS

BIRMINGHAM · BOSTON · CHICAGO · DETROIT · NEW YORK · PHILADELPHIA · PITTSBURGH · SYRACUSE · TORONTO

Natco Ceramic Glaze Vitritile for Interior Walls





National Biscuit Company's new Chicago Bakery
Exterior—Buff Dri-Speedwall Tile
Interior—Ceramic Glaze Vitritile
Architects and Engineers: Alexander D. Crosett & Associates
General Contractor: Ragnar Benson, Inc.

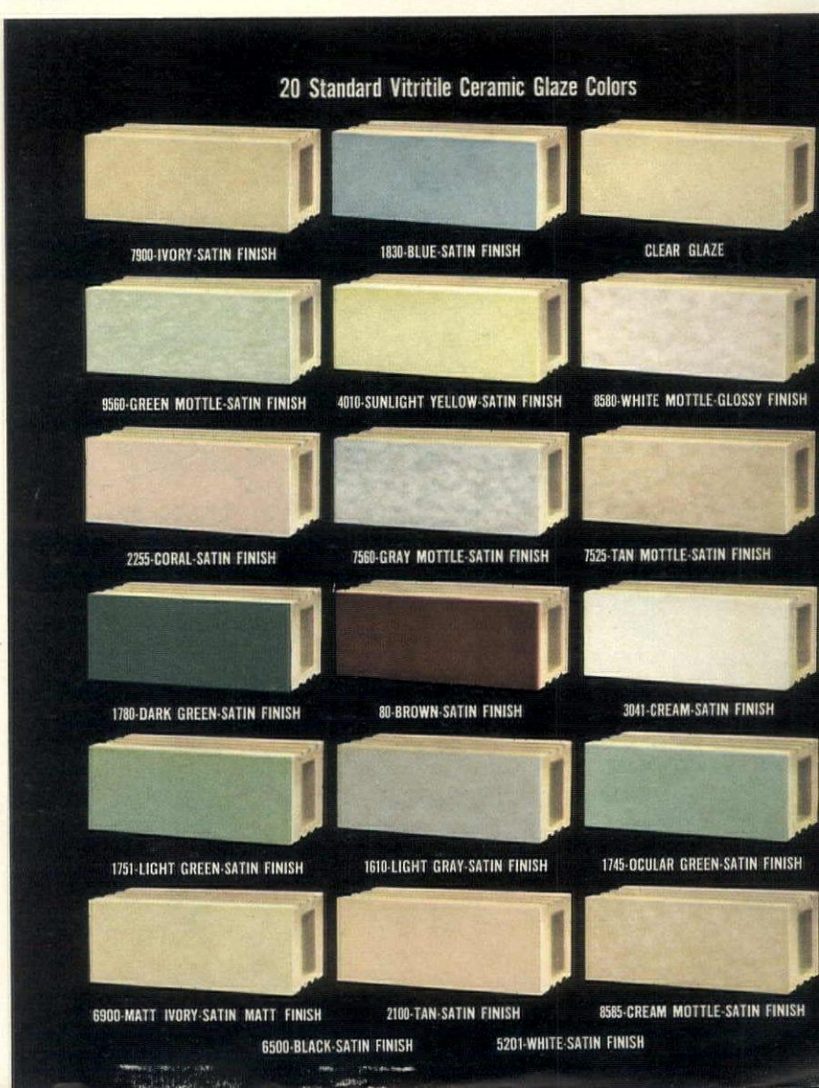
Inside this mammoth structure, Natco Structural Ceramic Glaze Vitritile provides thousands of square feet of sanitary, easy-to-clean walls. Besides lending itself to desired architectural effects, Natco Vitritile has virtues unmatched by other building materials. It *won't burn*, it's *load-bearing*, it's *maintenance-free*, it's *permanently beautiful*. Only a structural clay product of this character has *all these characteristics*. Furnished in four nominal face size series—"8W" (8″ x 16″), "6T" (5⅓″ x 12″), "4D" (5⅓″ x 8″), "4S" (2⅔″ x 8″)—in 20 beautiful ceramic glaze finishes.

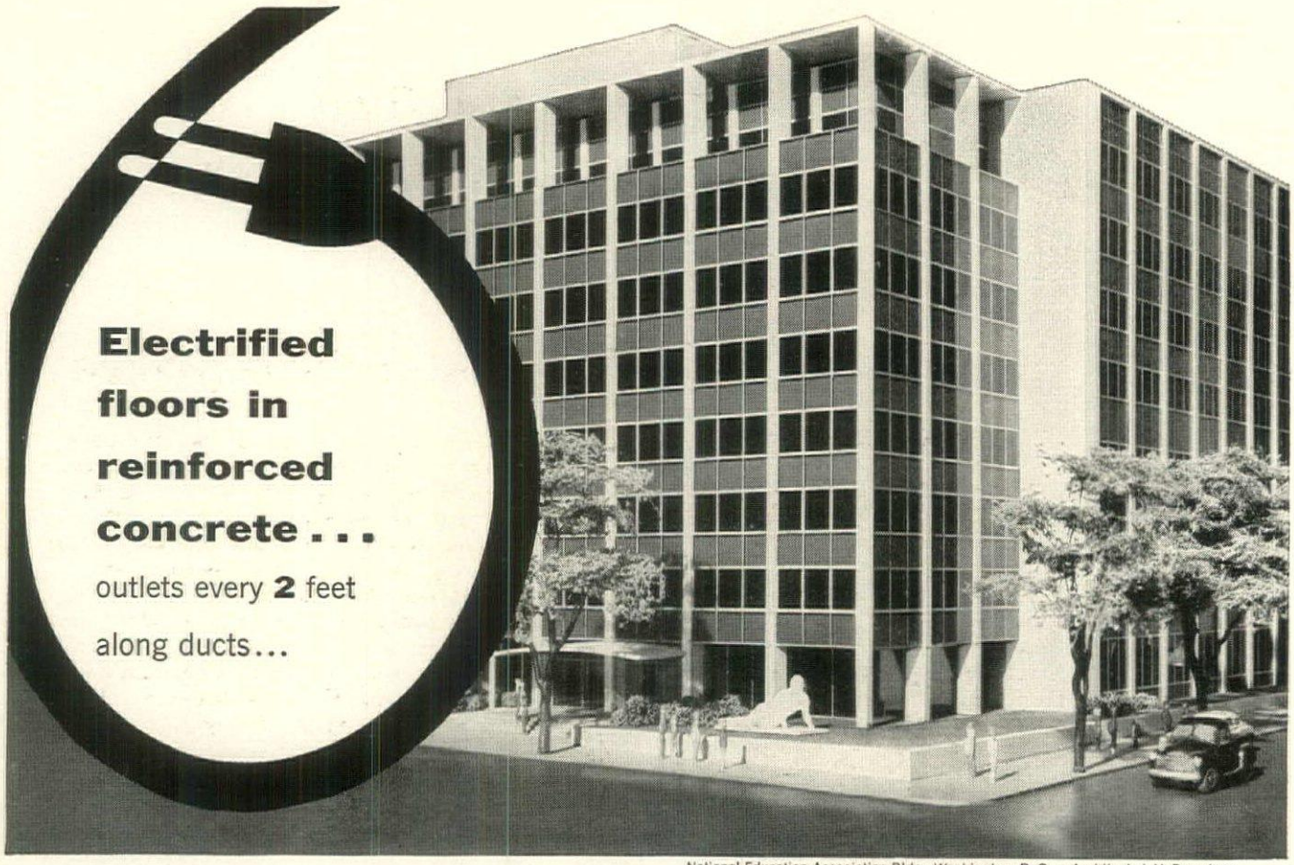
Are you planning a new building? May we tell you more about Natco Dri-Speedwall Tile and Natco Vitritile? For information on these products write to: Natco Corporation, 327 Fifth Avenue, Pittsburgh 22, Pennsylvania.

NATCO
QUALITY CLAY PRODUCTS SINCE 1889

Other Natco Clay Products Include:

FACE BRICK • STRUCTURAL TILE
STAIRTREAD TILE • CLAY PIPE
CONDUIT • FLUE LINING

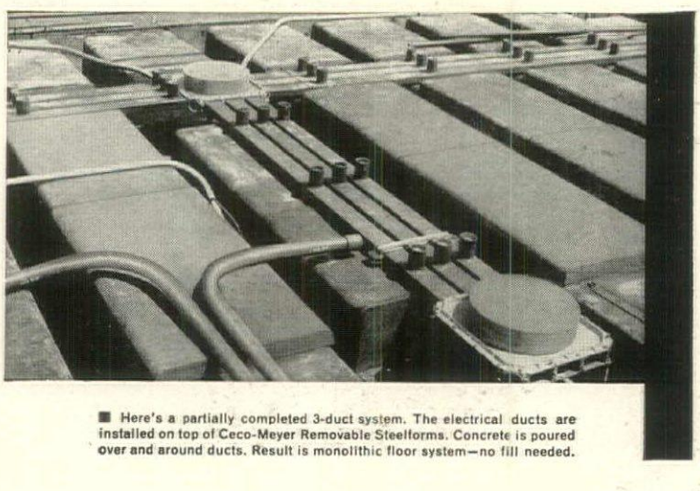




National Education Association Bldg., Washington, D. C. • Architect: J. H. Saunders
Consulting Architects: Reisner & Urbahn • Structural Engineers: Beall & LeMay
General Contractors: Joseph F. Nebel Co.

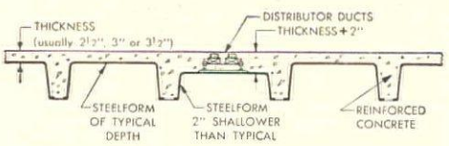
Yet the cost is 19% less due to Ceco-Meyer Steelform Construction

One of the prime necessities in buildings today is plenty of conveniently placed electrical outlets. And the most economical way to assure electrical flexibility is to build with reinforced concrete—with R/C Duct Floors provided by Ceco-Meyer Reinforced Concrete Joist Construction. That's how the problem was solved at the National Education Association Building, Washington, D. C., where R/C Duct Floors actually cost 60¢ per square foot less than cellular steel flooring, or a saving of 19%. In R/C Duct Floor construction, a network of steel electrical ducts is buried in the structural slab. Capped outlets every 2 feet along the ducts provide handy electrical connections for the telephones and business machines now in use. When expansion or re-arrangement is necessary, electrical equipment can be moved anywhere without costly rewiring or tearing up floors to provide electrical outlets. On your next building project, consult Ceco Engineers. They can save you money with R/C Duct construction—at the same time you get rigid Reinforced Concrete floors. CECO STEEL



■ Here's a partially completed 3-duct system. The electrical ducts are installed on top of Ceco-Meyer Removable Steelforms. Concrete is poured over and around ducts. Result is monolithic floor system—no fill needed.

Insist on the structural rigidity of reinforced concrete joists . . . insist on economy, too



Cross-section through distributor ducts, showing the strength and simplicity of R/C Duct Floors made with Ceco-Meyer Reinforced Concrete Joist Construction.

CECO STEEL PRODUCTS CORPORATION
Offices, Warehouses and fabricating plants in principal cities
General Offices: 5601 West 26th Street, Chicago 50, Illinois

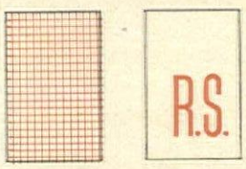
IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE



The first new...all-new "Custom" door at standard prices

An outstanding example of the "Kawneer Touch" . . . the new all-welded aluminum door can be "customized" to your needs. Now you can specify a door that is 10% stronger than similar doors, provides a clean, seamless, eye-appealing appearance, and features interchangeable hardware . . . yet the cost compares with other standard doors. Here is the only stock door that can be styled to any type of store. Learn all about it now. See your Kawneer dealer or write Kawneer, Niles, Michigan.

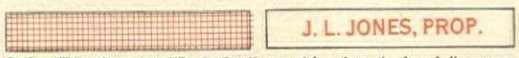
Now! —identification hardware "individually designed"



Style "M": Cosmopolitan hardware for *double-acting* doors.



Style "B": Coronet "Pull Handle" ideal for symbol.



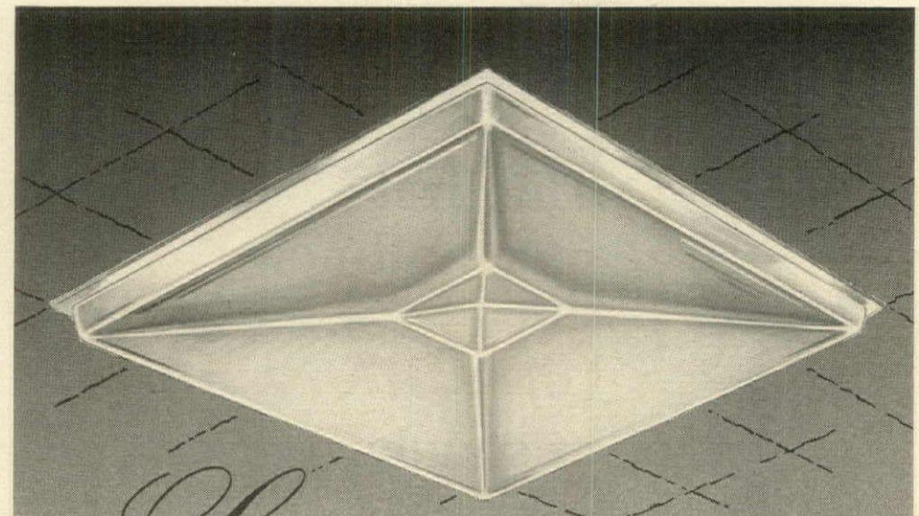
Style "B": Coronet "Push Bar" provides length for full name.

Kawneer offers a choice of four different styles of hardware. The two styles shown have interchangeable face plates. If you wish a face plate to identify any type of business or name, all you do is have artwork prepared. Kawneer will laminate it in plastic, etch it on aluminum, or produce it on any material you desire and in any color. The cross-hatch plate is then merely replaced right on the job with the new design.

Completely welded construction for greater strength—lower cost

- 10% stronger than most doors
- New "deep-weld" penetrates metal 100%
- Hairline joints and unblemished finish for attractive appearance
- No exposed, unsightly screws
- Seamless tubular frame construction
- Long lasting beautiful alumilite finish

Kawneer
General Offices
NILES, MICHIGAN
ARCHITECTURAL PRODUCTS DIVISION



for *Luxury* lighting...

GARCY 5600 SERIES

Recessed Luminaires

featuring one-piece plastic shield

in 2′ x 2′, 2′ x 4′ and 4′ x 4′ units

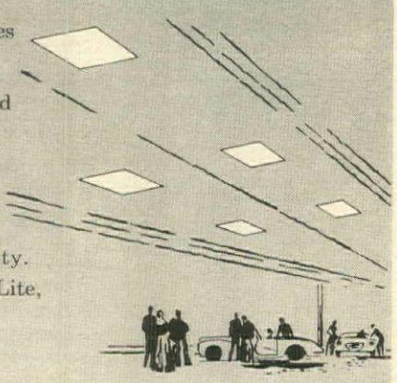
In this series Garcy offers the highest quality lighting with a choice of three types of shielding . . . all in hinged frames:

Plexiglas shield—The unique die-formed contour gives uniform low brightness and provides the rigidity which permits a one-piece diffuser to be used even in the the large 4′ x 4′ unit.

Louver shield—Lightweight, completely framed and tab-locked into a one-piece assembly for convenient maintenance, superior appearance and greater durability.

Glass shield—Standard is Corning Alba-Lite, fine-ribbed translucent opal glass, an excellent diffusing medium. Other types of glass are available as desired.

Sturdy, rigid frames provide secure mounting, and are designed to prevent light leaks around edges.



Send for Bulletin 552-L

GARCY Quality by *Design*

Garden City Plating & Mfg. Co., 1736 N. Ashland Ave., Chicago 22, Ill.

In Canada: Garcy Co. of Canada, Ltd., 191 Niagara St., Toronto

THREE TYPES OF SHIELDING

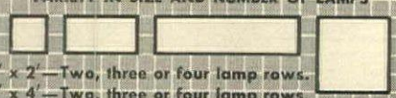


Plastic panel in hinged frame

Hinged one-piece louver

Glass panel in hinged frame

VARIETY IN SIZE AND NUMBER OF LAMPS



2′ x 2′—Two, three or four lamp rows.
2′ x 4′—Two, three or four lamp rows.
2′ x 8′—Two, three or four lamp rows.
4′ x 4′—Six, eight or ten lamp rows.
Choice of rapid start fluorescent or slimline lamps.

LETTERS

Continued from p. 80

sents a complex problem. While I do not consider the Skidmore, Owings & Merrill design an appropriate solution, I can hardly join in the mostly unfounded criticism from Congressional, Veterans Organizations, architectural and many other sources. Much of this criticism is nothing more than ax-grinding (such as the bricklayers' congressman)—hardly any of it shows any comprehension of the design. Many of the opinions seem out of context in 1955; they might have been more understandable, even if no more correct, 50 years ago.

The right to criticize requires no defense. But this right carries with it a duty to criticize intelligently and fairly, particularly when the criticism is to come from such "high" sources.

Before more damage is done, someone in the architectural press would do well to discuss the problem from this standpoint. The most sensible such discussion which I have yet read was published in the May '53 issue of FORUM under the title "Criticism vs. Statesmanship in Architecture."

BRADLEY RAY STORRER, *designer*
Dearborn, Mich.

REBUILDING CITIES DOWNTOWN

FORUM's round table report to its 48,000 readers on "How to Rebuild Cities Downtown" (June '55) and the distribution of reprints to 50,000 more has stimulated a flood of comment. Last month FORUM *devoted a special section to these letters. This month* FORUM *concludes the round table discussion with the following excerpts from additional letters.*—ED.

A vital topic for industry

Forum:

Congratulations on one of the most constructive pieces of magazine writing on a vital topic. The round table report in the June FORUM is an important contribution to our future thinking.

AUGUST A. BUSCH JR., *president*
Anheuser-Busch, Inc.
St. Louis, Mo.

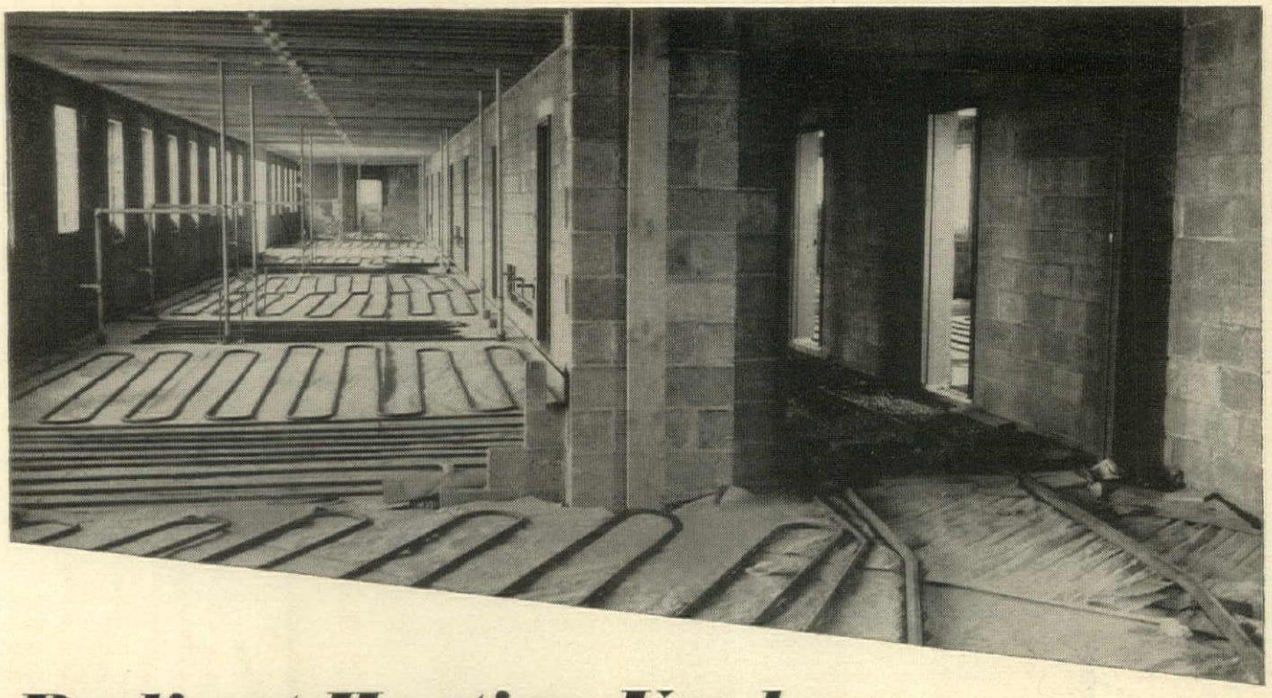
Another needs political leadership

Forum:

I found the discussion very stimulating indeed. However, as far as I am concerned, it ignored the most important element in the whole process—courageous, imaginative, resourceful *political* leadership. Opportunities are everywhere, but action is nowhere without topflight political leadership. The bolder the plans, the tougher the political problems in putting them across.

EDWARD J. LOGUE, *development administrator*
Office of the Mayor
New Haven, Conn.

continued on p. 88



Radiant Heating Used to Provide Maximum Comfort for Cerebral Palsy Patients

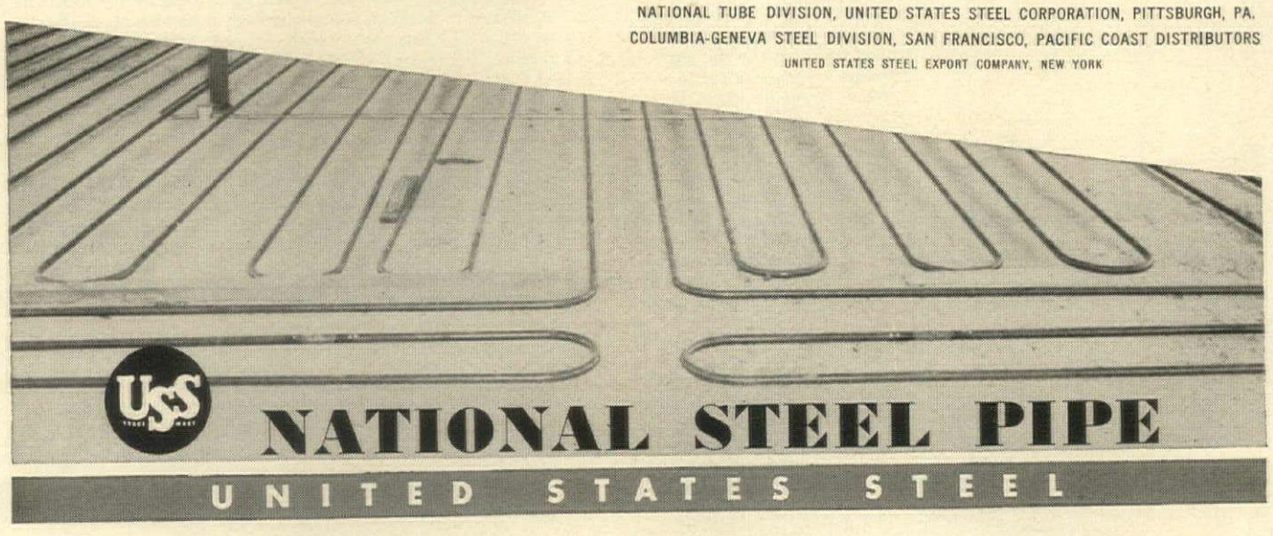
A complete radiant heating system of USS National Steel Pipe has been installed at the Walter D. Matheny School for Cerebral Palsy Children, Peapack, N. J., to insure heating comfort for the patients and to keep operating costs of the institution at an efficient low.

The majority of the pipe used in private rooms was ¾-inch standard. Supply mains through the hallways were laid in sizes up to 2 inches diam.

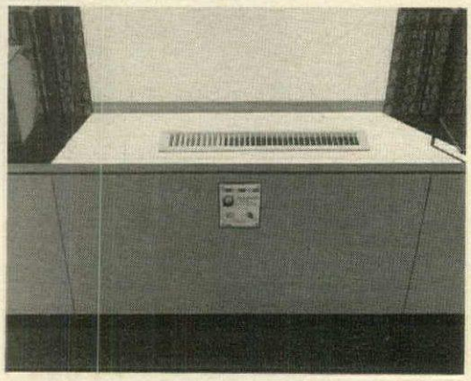
In installations such as this, where dependability, efficiency and economy are the prime considerations, architects and contractors almost inevitably turn to National Pipe. They have been specifying National, in fact, for over 60 years as the "standard" for conventional plumbing and heating systems. And why not? National Steel Pipe has every characteristic necessary to meet the requirements of such applications—smooth, uniform bending; sound, strong welding properties; and long service life. These are the characteristics that have made National the largest selling pipe in the world.

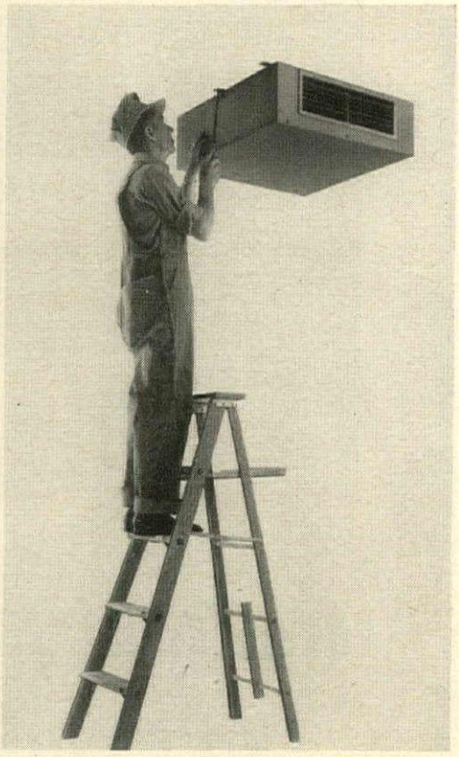
Write *now* for complete details on the use of USS National Steel Pipe for radiant heating and snow melting applications. Ask for Bulletin No. 19. And keep National in mind for your next installation.

NATIONAL TUBE DIVISION, UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK









Studies in function and design

a

Automatic, Year 'Round Comfort. American-Standard Remotaire Heating-Cooling Systems make students, teachers and administrators feel better, work better, stay healthier because the air is clean and the temperature right. Automatic Remotaire Room Conditioners heat or cool the air, filter it and blend it with fresh outside air. The temperature can be controlled individually in *each* room. Remotaire Systems are economical to install . . . and they conserve valuable space because central heating and cooling plants are located in an out-of-the-way area. They require only a simple, space-saving piping system that carries water from the boiler and water chiller to the individual room conditioners.

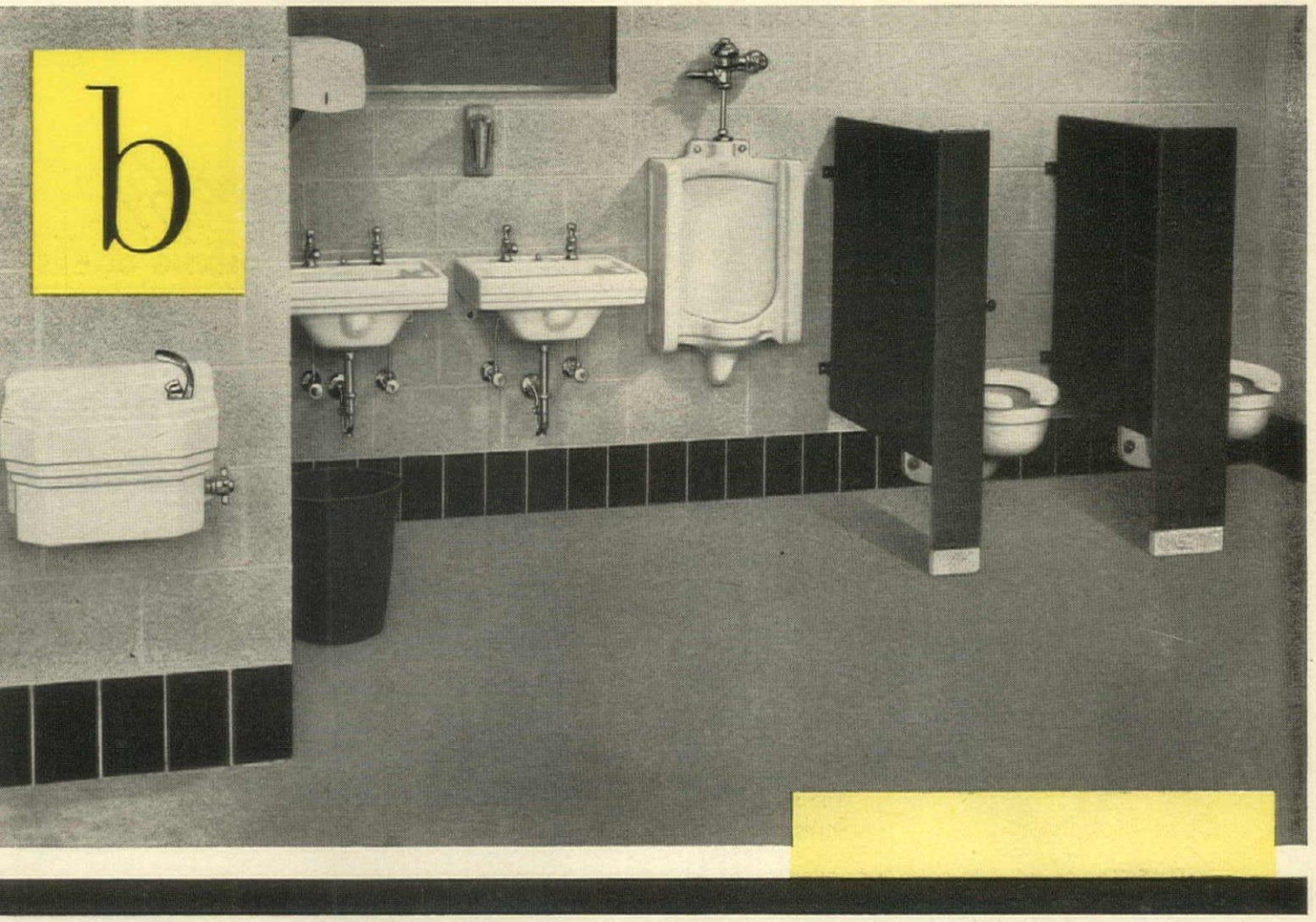
Remotaire Room Conditioners are available in floor models housed in handsome steel cabinets, as totally recessed units which can be installed in custom cabinets, and horizontal models which are suspended from the ceiling. All models come in four convenient sizes.

b

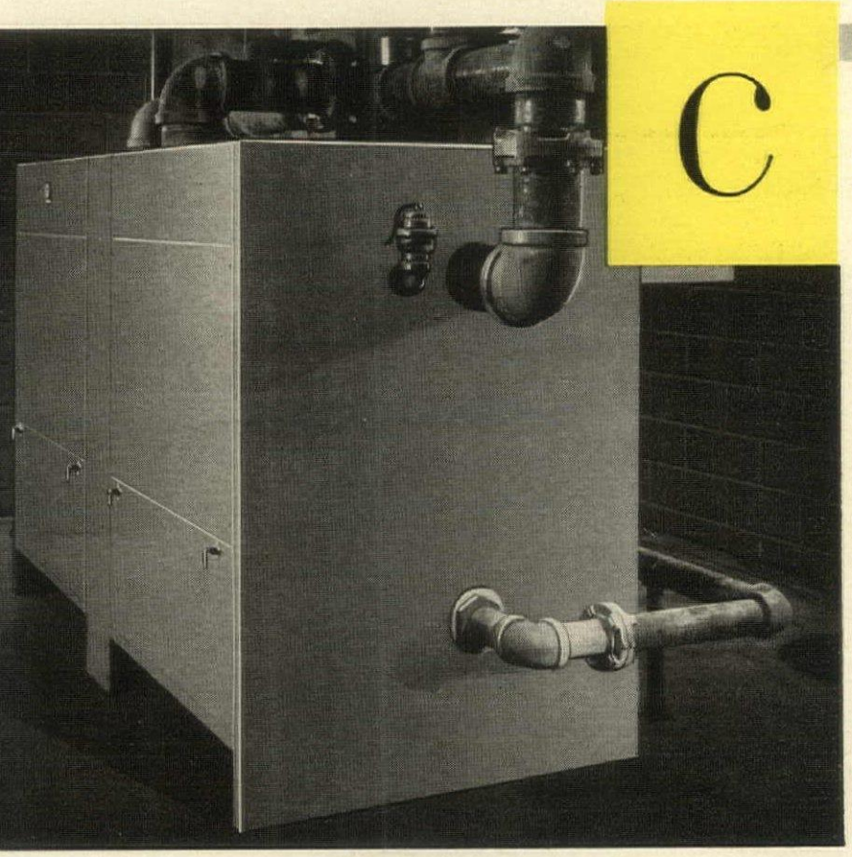
Greater Sanitation . . . Easier Maintenance. The American-Standard plumbing fixtures in this boys' locker room assure easy maintenance and years of service under hard use. The drinking fountain, lavatories, toilets and urinal are all wall hung to make cleaning quick and easy, and avoid a cluttered floor area. Made of genuine vitreous china, these American-Standard fixtures will stand up under tough day-in, day-out service. There is a wide line of American-Standard plumbing fixtures to fill every school need . . . to meet any architectural requirement.

c

Compact New Boiler. The G-6 Gas-Fired Boiler stands only 65″ high, and may be installed with minimum headroom in any size building. A one-piece cast-iron base, plus simple control and piping arrangements make the G-6 easy and economical to install. Large access door and panels make it easy to clean and service. The American-Standard G-6 Boiler comes in a wide range of sizes . . . with A.G.A. inputs ranging from 650,000 to 5,200,000 Btu per hour. Ratings also are approved by I-B-R. Constructed of durable cast iron, the G-6 Boiler provides years of dependable, economical operation.



for schools by American-Standard



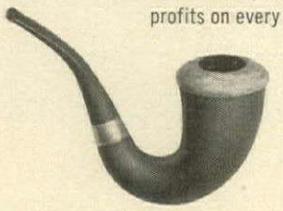
These are just a few of the many quality products made by the Plumbing and Heating Division, American Radiator & Standard Sanitary Corp., P. O. Box 1226, Pittsburgh 30, Pennsylvania.

AMERICAN-Standard

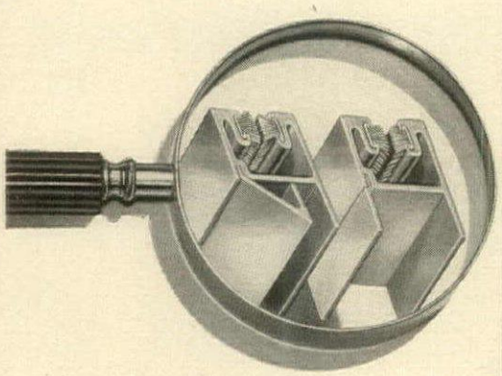


elementary...

Glazing still takes time, but with Arcadia's new Interchangeable Moulding Strips it takes far less than by other methods. Now, any Arcadia aluminum door can be glazed with either ¼" plate or 1" insulating glass just by choosing the proper moulding strips. Takes no screws, special tools or skills. Strips snap easily in place, save glazier's time. And that saves installation costs, boosts profits on every job.



Simplified glazing is just one important point of difference between Arcadia and other sliding glass doors. For details on Arcadia steel and aluminum doors, see the Yellow Pages under "DOORS, Sliding."



ARCADIA METAL PRODUCTS, ARCADIA, CALIF.
Distributors in Canada, Puerto Rico and throughout the U.S. National Member Producers' Council, Inc., and National Association of Home Builders.

arcadia® *sliding glass doors*

Help build a better America...
See an architect

LETTERS

Continued from p. 84

Impact on downtown Pueblo

Forum:

The report in the June FORUM concerning urban redevelopment has been an inspiration for plans to completely rebuild 40 blocks of downtown Pueblo.

JACK LACY, *manager*
Chamber of Commerce
Pueblo, Col.

Consideration for the human element

Forum:

. . . A very thought-provoking report.

As you take further steps in this project, you no doubt will bring in the opinions of specialists on human behavior and thus insure that full consideration is given to the human element desiring freedom of choice and independence of action.

F. O. PRIOR, *president*
Standard Oil Co. (Indiana)
Chicago, Ill.

For architects, a reminder

Forum:

The positive and intelligent approach to this timely subject by FORUM is of extreme significance. It not only reminds the architect of his professional responsibility to society but also should act as a catalyst to command the attention of everyone to endeavor to find intelligent solutions to the problem.

The rapidity with which modern man is advancing in his quest for an ideal living environment and the dislocations experienced by our urban centers, as a result of new concepts in communications and transportation, should make every citizen conscious of this most vital human concern.

MARIO J. CIAMPI, *architect*
San Francisco, Calif.

A limit on building life

Forum:

How to rebuild cities downtown has been handled courageously by a good team. Congratulations!

Downtown is an outgrown, old-fashioned functioning super-super-mart. Downtown is the parent of the super mart. Downtown is a clearing house, and we never have nor ever will manage without it. Rebuilding it will be and should be a long tedious task; it should be, so that all the complicated ramifications can be studied carefully for the best results.

Perhaps a building permit of limited time should be invoked, say a 40- or 50-year permit. Such limitation will tend to liquidate debt on buildings and land to prescribed periods, and at expiration the permit should be reexamined. If it is found that its planning and use is still in the public interest, it can be extended. If not, it is canceled. A building that has

continued on p. 92

Specify...

FOLDING DOORS AND PARTITIONS COVERED IN

TOLEX®

SUPPORTED VINYL

LOOK BETTER

WEAR LONGER

ARE WASHABLE

FIRE RESISTANT

No other covering material offers such outstanding quality and features at such low cost! Produced in dozens of patterns and leather effects in a wide range of decorator colors . . . the *perfect* folding door material!

We'll send you Sources!

TEXTILEATHER, Toledo 3, Ohio
Division of The General Tire & Rubber Company

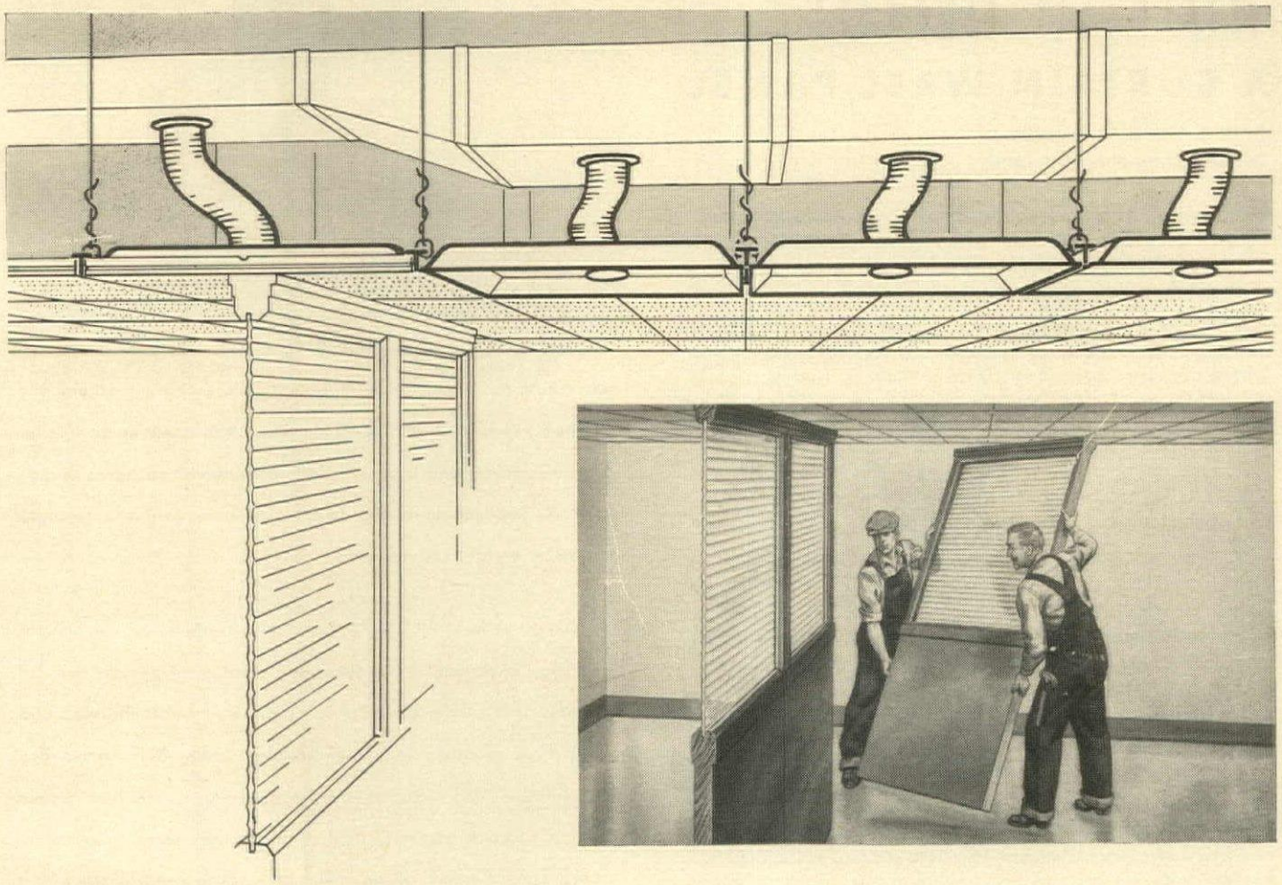
Send me the names of folding door makers who use TOLEX supported vinyl coverings:

Name_____

Address_____

multi-vent®

LOW VELOCITY AIR DIFFUSERS



eliminates air conditioning problems when relocating partitions...

For architects and engineers designing air conditioned modular office space, Multi-Vent solves a troublesome problem. Multi-Vent air diffusing panels, once installed flush in the ceiling, need not be moved, altered in any way, or even adjusted when partitions are moved to suit tenants' changing needs.

Since Multi-Vent introduces conditioned air through the perforations in standard acoustical ceiling pans at low velocity, and since the air is gently diffused downward into the room, there is no "throw" or "blow" to bounce off nearby partitions. It is for this reason that a partition may actually bisect a Multi-Vent panel without affecting comfort conditions in the surrounding area.

Write for detailed literature and name of representative in your area.

multi-vent division of THE PYLE-NATIONAL COMPANY

WHERE QUALITY IS TRADITIONAL

1376 North Kostner Avenue, Chicago 51, Illinois

SALES AND ENGINEERING REPRESENTATIVES IN PRINCIPAL CITIES OF UNITED STATES AND CANADA

HOW TO SELECT

A CURTAIN WALL PANEL

By H. R. SPENCER, President
The Erie Enameling Company

● Our more than 30 years' experience with architectural Porcelain Enamel and hundreds of tests on panels of all designs has clarified the physical requisites of a satisfactory panel for curtain wall construction.

There are currently two types of panels being manufactured. One is laminated and depends upon adhesives for assembly. The other is mechanically closed using bolts, screws, rivets or welding. The following requisites and suggested tests apply to both types.

1. The panel must be incombustible and incapable of supporting combustion.

2. Free circulation of air within the panel should be eliminated by some form of seal. The sealed-in air helps the insulating properties and avoids the problem of condensation, moisture concentrations, and necessity for weep holes. The seal should be of a nature which merely traps the air and resists free circulation, yet permits slight "breathing" resulting from temperature changes.

3. The metal skins of the panels are sufficient vapor barriers but, preferably, should be augmented by a reflective internal barrier which stops the passage of radiant heat and the through-transfer of temperature variations existing on the exterior and interior faces of the panel.

4. Panels should have a turned flange which will allow any sheared metal edge to be concealed at least one inch within the wall and away from the weather. This will prevent staining.

5. The following tests are suggested to assure serviceability.

Delamination Test:

(a) Magnetic or mechanical separation pull of 500 pounds per square foot between exterior skin and interior skin.

(b) Ditto: after immersion of 500 hours in a mixture of detergent and water.

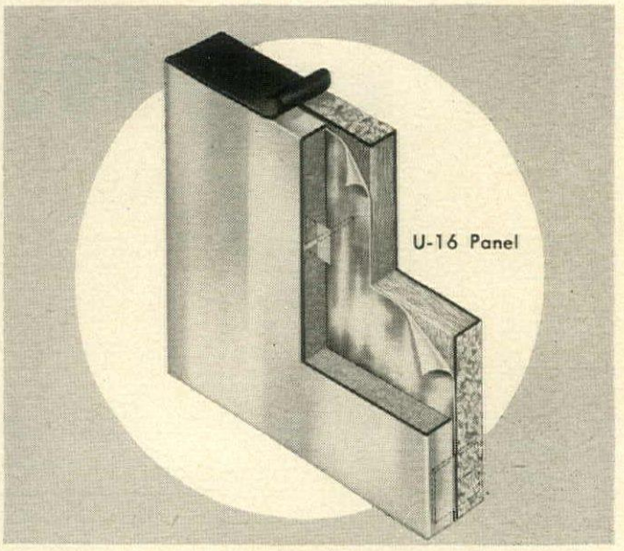
(c) Ditto: after ten 30-minute cycles of freezing — thawing.

(d) Ditto: after exposure to 1000° F. for 30 minutes.

Absorption Test: Measure weight gain or loss after (b).

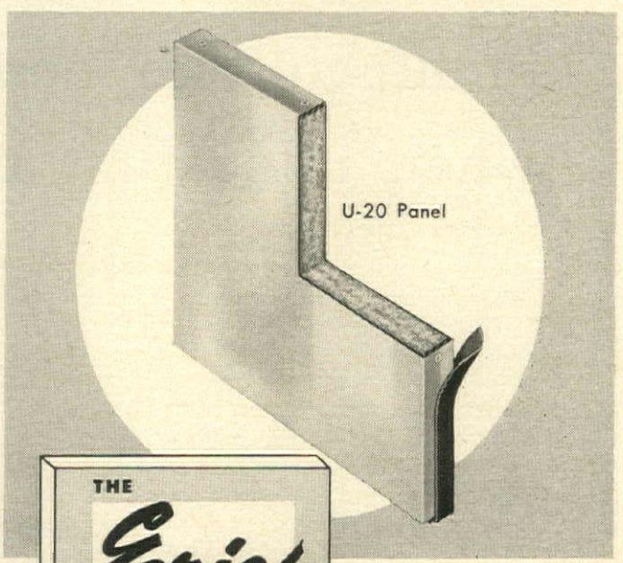
Combustion Test: Measure weight gain or loss after (d).

Deflection Test: No permanent deflection after dropping 10" leather sandbag, weighing 60 pounds, from a height of 1½ feet. No failure after dropping 3 feet.



Note how completely the ERIE U-16 Panels meets the major requirements for a curtain wall panel. It is entirely mechanically fastened, reinforced with concrete, insulated, contains an interior reflective barrier and is sealed sufficiently to entrap air as recommended. Separation of the two panel faces reduces through-contact of metal to a minimum.

The thinner (1-inch) ERIE U-20 Panel also features all mechanical fastening, insulation, a weather seal that entraps air and an assembly that places all sheared edges well within the wall and away from weather to avoid staining. Both ERIE Panels are incombustible and incapable of supporting combustion. Bosses created at each assembly hole in the flanges serve to separate nested panel flanges, giving minimum metal-to-metal contact.



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cuts clay tile installation costs up to 20%...or more!

CTA 11

The new 3M Clay Tile Adhesive makes installation so much faster and easier—even modest budgets can afford clay tile now!

3M Clay Tile Adhesive dramatically cuts installation time and installed costs of beautiful clay tile.

CTA 11 is so fast, so clean, so easy to use that installation costs have been lowered by 20% or more. Schools, stores, factories, homes, new construction and remodeling—all can now enjoy clay tile luxury even on limited budgets.

Dry wall, plaster, concrete block, plywood, metal or virtually any plumb, solid wall surface is suitable for installation of clay tile with CTA 11. No premixing. It spreads like butter right from the can. Only a trowel is needed. And CTA 11 will hold a ton per tile, with a resilient, enduring bond that resists water and settling cracks.

Gain similar advantages by setting ceramic floor tile with CTA 12. Get full facts on CTA 11 and CTA 12 fast. Write today to 3M, Department 1810, 417 Piquette Avenue, Detroit 2, Michigan.

Tilemen themselves report:

(1) CTA 11 allows tile contractors to handle more jobs per month, with greater profit opportunities.

(2) CTA 11 avoids the extra labor, time and clean-up cost usually encountered.

(3) CTA 11 allows tile installation and grouting on the same day.

(4) CTA 11 avoids costly repainting and allows the tile installation to be made before or after the finished carpentry.

(5) CTA 11 allows tile setters to work right through the winter.

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Long Beach Calif. High School; Hugh R. Davies, Architect; Smith-Campbell Co., Contractor.

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NAME TITLE

COMPANY

ADDRESS CITY

LETTERS

Continued from p. 88

outlived its usefulness should expire. This brings the regeneration of cities, as it does in the human family.

GEORGE FRED KECK, *architect*
Chicago, Ill.

Beyond the investors' benefit

Forum:

Such grand undertakings involved in the rejuvenation of downtown should be or must be for more reasons than the "investors benefit."

Who can evaluate for me the worth of intimate open spaces, greenery, sculpture (even in billboard art), studied street textures and furniture, etc.? Is the human need for this any less than it was in the medieval market place, the renaissance square? Does the jet-propelled pogo stick of our era obviate our appreciation of the desire to see and be seen, to sit and watch, to smell grass, trees and actually see the sun while shopping, working or what have you? My answer is obvious. If we must rely on suburbia to furnish these elements, then Downtown will continue to worry about redevelopment necessitated by economic factors.

M. R. WOLFE, *associate professor, city planning*
School of Architecture
University of Washington
Seattle, Wash.

Downtown Inc., a financial problem

Forum:

I find it most difficult to envision any operation that would require the deeding of downtown property into one corporation in which the various owners would be participants. Downtown property owners would be most reluctant to surrender their autonomy and each become only a small part of a gigantic corporation. The financing problem would be almost impossible if thought of in the terms of retiring all existing debt on those properties and the placing of new debt in an amount sufficient to pay the cost of redevelopment.

J. R. JONES, *vice president*
Security-First National Bank
Los Angeles, Calif.

Downtown's sales appeal

Forum:

The city is the tops in many things. It can be the tops in most everything. Its attractions are not yet sufficiently elevated to insure absolute supremacy in any one field. Its idiosyncrasies can never be changed. Its diversity is poor. It is monotonous for 12 months out of 12 months of the year. (So is most any locality.) It has the potentiality of increasing the diversity of its attractions, of reducing the disagreeable aspects.

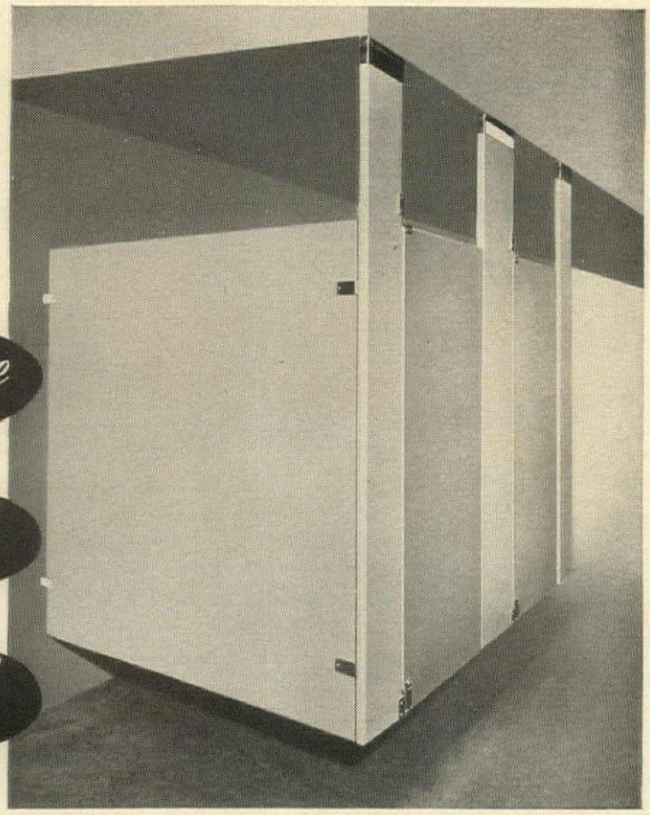
To my mind the city can be the most thrilling place to live as well as to visit. The concentrated essence of all the bestest

continued on p. 96

full gauge

full width

full finish



Nicholson Type AC Toilet Compartment. Ceiling hung. Ultra-modern. Sanitary.

Nicholson Metal Partitions

better built . . . for lasting service

Only time will tell . . . whether or not the average toilet compartment will deliver long life and real serviceability. But Nicholson compartments give you "full" assurance right from the start—full gauge metals . . . full width partitions . . . full final finish. Nicholsons' are built to stand up and still stand out . . . even after years of steady service.

- **heavier gauge steel:** panels—full 20 gauge
  pilasters—full 16 gauge
  headrail and tubing—full 16 gauge
  stainless steel plinth—full 20 gauge
- **thicker partitions:** doors and panels—full 1" thick
  pilasters—full 1¼" thick
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  zinc chromate primer
  2 coats of synthetic baked enamel

Specify *for lasting service.* Specify Nicholson.

Available in the following types—and wide selection of colors:

Type A—floor braced	Type AC—ceiling hung
Type AR—overhead braced	Type ARP—panel type
Type B—flush type	Type BP—panel type

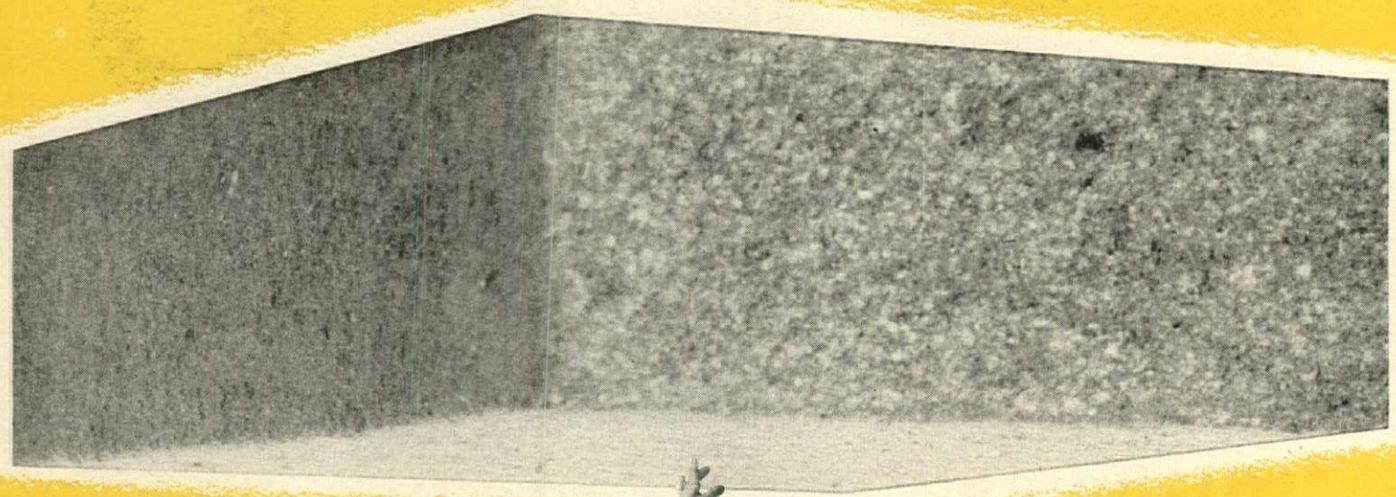
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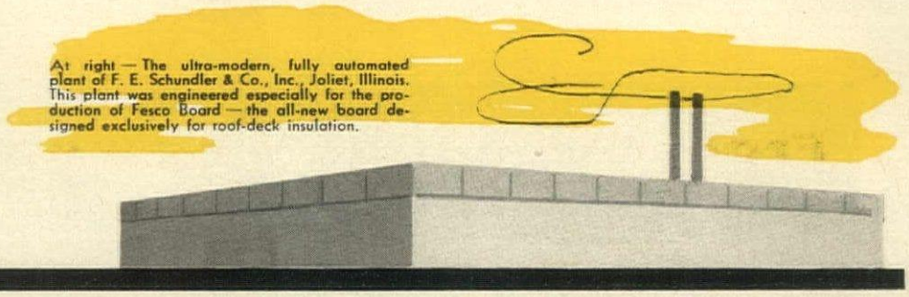
ABOVE: Photomicrograph (microscopic X-ray) of a granule of expanded perlite shows how expansion under 1700°F temperature hermetically seals the air cells (lighter areas), creating ideal insulation. Granule shown was photographed with sodium light.



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F. E. SCHUNDLER & COMPANY, INC. 504 Railroad St.

plant comes . . .



At right — The ultra-modern, fully automated plant of F. E. Schundler & Co., Inc., Joliet, Illinois. This plant was engineered especially for the production of Fesco Board — the all-new board designed exclusively for roof-deck insulation.

FESCO
ROOF DECK INSULATION
BOARD

Hermetically Sealed, Incombustible, Rigid, Permanent

CHECK THESE OUTSTANDING FESCO BOARD FEATURES:

FIRE-PROOF — Reliable, authenticated laboratory tests show Fesco Board to have a flame spread factor of only 20.5, and smoke contribution factor of 0.

PERMANENT — Expanded Coralux perlite the principal ingredient of Fesco Board, is dielectric, chemically inert and non-absorbtive. As a result, Fesco Board will not rot, mildew, deteriorate. Mineral composition will not support organic life of any type.

STRUCTURALLY STRONG — Independent laboratory testing has proved Fesco Board to be compressible, yet essentially stable. In actual compression tests, a 1-inch section of Fesco Board withstood 140-lbs. p.s.i. and to prove its inherent strength withstood 55-lbs. p.s.i. of transverse pressure

INSULATING VALUE — Fesco Board has a K-factor of .285 @ 0°F., and .295 to .31 @ 75°F.

LIGHTWEIGHT — Easy-to-handle board units measure 1" x 24" x 48" or 1" x 24" x 36" and weigh approximately .66 lbs. per square foot — about one half the weight of most existing insulation boards.

MOISTURE RESISTANCE TEST DATA: Fesco Board has no capillary or wick-like attraction for moisture as do fibrous materials. Moisture resistance tests by a nationally known laboratory read as follows:

Material	Density Lbs/Cu/Ft	Thickness Inches	% Absorption 2 Hour	By Volume 24 Hour
Fesco	8.3	1	0.5	1.4

From 0 to 100% relative humidity, expansion of Fesco Board is less than 1/4 of 1%.

SPECIALLY DESIGNED FOR MASONRY, STEEL AND WOODEN ROOF-DECKS

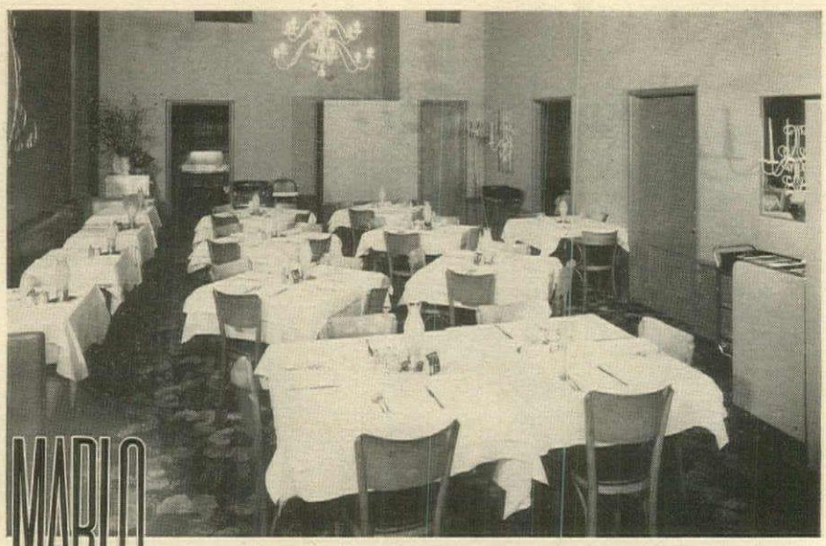
Here, for the first time is a board that combines every desirable feature of a roof-deck insulation in one product—designed specifically for the purpose.

Fesco Board consists of a homogeneous mass of expanded Coralux perlite particles, mineral binders and fibers. These materials are processed to form an easy-to-handle board unit that is dimensionally stable and easy to cut. It was developed to answer the demands of builders for a lightweight, moisture resistant, non-combustible roof-deck insulation that would resist the ravages of time, fire and the elements.

Coralux perlite, the major ingredient of Fesco Board, is expanded and annealed at temperatures of 1700°F to form HERMETICALLY SEALED beads which contain scores of air-cells, compartmented and reinforced by membranes of glass. The entrained air in this multi-cellular structure makes perlite the perfect permanent insulator. Expanded Coralux has long been used in fire-proof plaster and concrete, and has been assigned fire-ratings of up to 4 hours. Having been pre-fused at such high temperatures, expanded Coralux perlite is incapable of burning.

Write today for samples and technical data on all-new Fesco Board.

Joliet, Illinois Manufacturers of CORALUX PERLITE PRODUCTS & VERMICULITE PRODUCTS



MARLO AIR CONDITIONING HELPED BOOST THIS RESTAURANT'S BUSINESS 40%

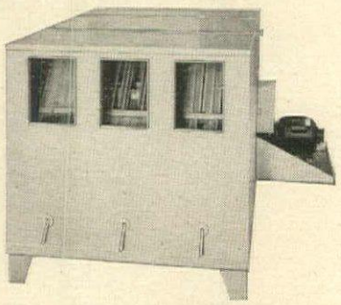
SINGLE MULTI-ZONE UNIT PROVIDES INDIVIDUALLY CONTROLLED COMFORT CONDITIONING for FIVE SEPARATE AREAS

Redecorating and air conditioning has increased business 40% for the popular Broiler Restaurant, Portland, Ore., reports operator Walter Holman.

The Broiler is cooled and heated by a Marlo Multi-Zone year-round air conditioner, a single unit which provides individual comfort conditioning for five separate areas, with provisions for adding a sixth zone in the future.

Remodeling contractors were Ferguson and Cassidy; interior decorating was by Harlow Decorating Co.; Commercial Refrigeration Co. installed the air conditioning system, which was designed and engineered by Mark Raymon of Pacific Air Control.

Write today for complete information, including comprehensive new bulletin, on the Marlo Multi-Zone Air Conditioning Unit, designed for applications where one unit must serve a number of zones.



SEE OUR BULLETIN IN SWEET'S CATALOG

MARLO coil co.

SAINT LOUIS 10, MISSOURI

Quality Air Conditioning and Heat Transfer Equipment Since 1925

LETTERS

Continued from p. 92

of the mostest. The absolute tops in its special values and yet well rounded in its generalization.

There is no place you can find so much of so many different things and different ways of the life and work of so many people from so many countries. Now all that is left to do is to sell it. There are billions of customers.

HUGH PERRIN, *architect*
Chevy Chase, Md.

The trend in people's hearts

Forum:

In this age of air, speed, communication and transportation, and with the availability of all of God's great outdoors, no man wants to coop himself up on a 50′ lot or be "jailed" by or for his labor. We are moving into the New Age and, truly, every man shall have "his own vine and fig tree." So let us not endeavor to resuscitate the old body even by one way and not 18 ways as stated, by pumping new blood into it but let's bury it decently and resurrect a new type of city and enterprise by recognizing simply and surely the trend in the hearts of people—not that which is lacking in their pocketbooks!

SPENCER J. WARWICK, *architect*
Nashville, Tenn.

The penalty of property improvement

While our committee was delving into the myriad problems of urban renewal it became apparent to some of us that widespread deterioration of our homes and business properties had not "just happened." Like many other cities throughout the nation we had actually *encouraged* this condition on two principal fronts:

1. We had failed utterly to adequately enforce existing health and safety codes.
2. We had penalized improvers of property with higher taxes and had rewarded neglectors of property with lower taxes.

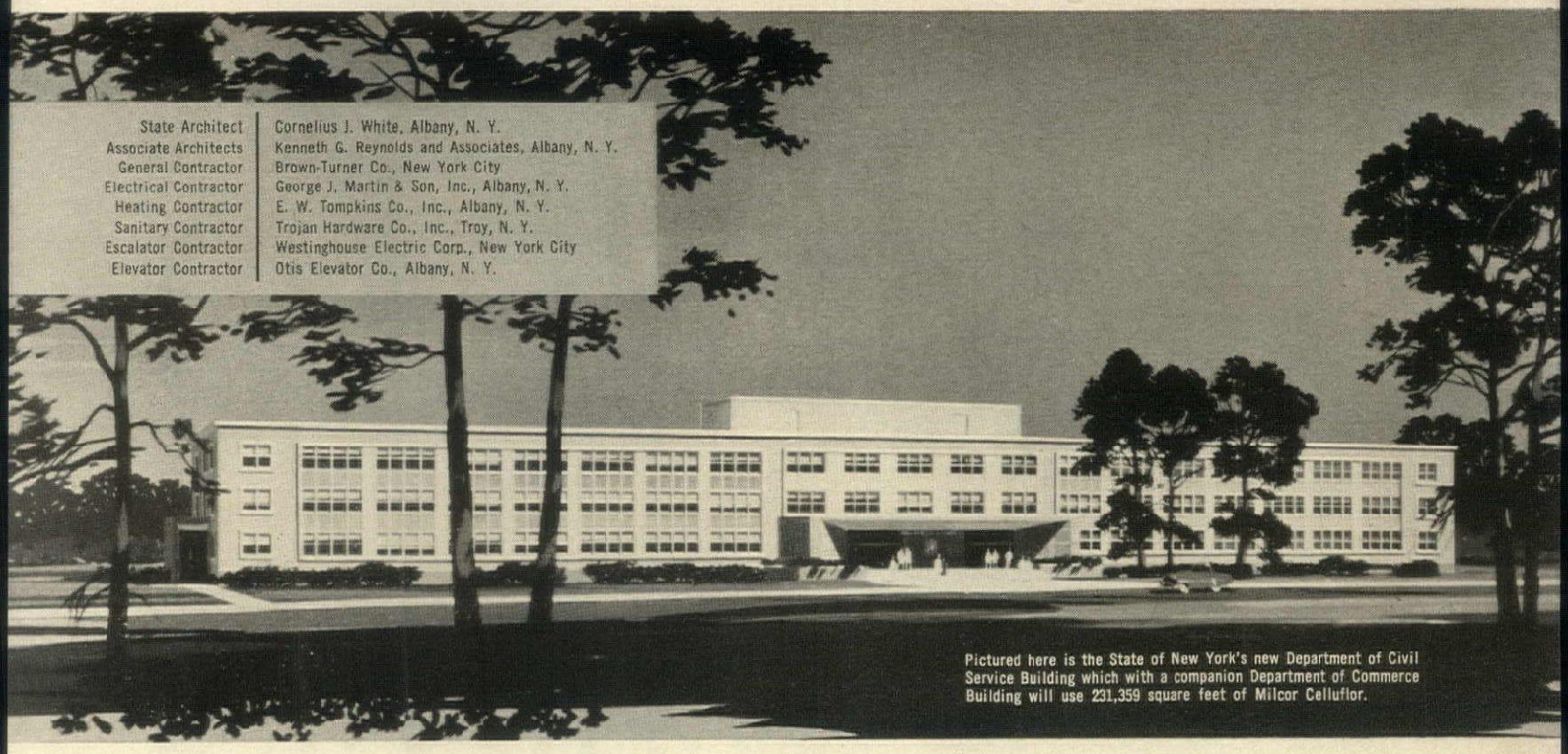
Unfortunately the only usable yardstick available to measure the value of property for tax purposes has been "market value."

Neglected property causes lower market value and therefore lower taxes. Improved property creates higher market value and therefore higher taxes. To irresponsible persons maintenance of lower market value is financially the better choice. It is also the green light to slums.

If a better property tax system cannot be devised, it follows that slum prevention will have to be achieved largely through the realistic enforcement of health and safety codes.

PHILIP L. ENNIS, *secretary-manager*
Retail Merchants, Inc.
Oakland, Calif.

continued on p. 100

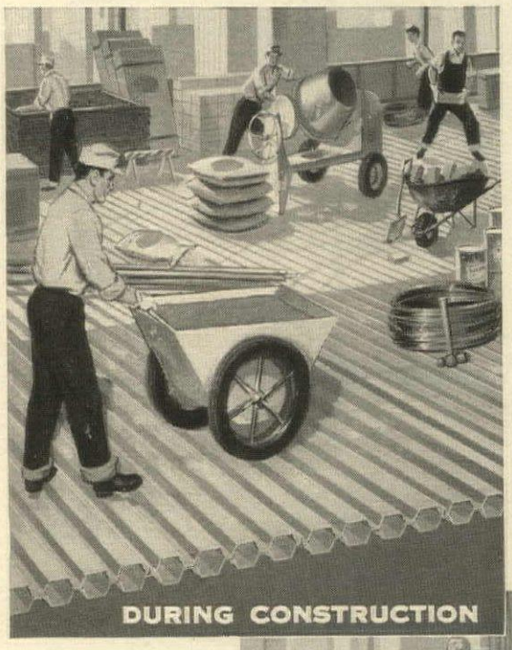


State Architect	Cornelius J. White, Albany, N. Y.
Associate Architects	Kenneth G. Reynolds and Associates, Albany, N. Y.
General Contractor	Brown-Turner Co., New York City
Electrical Contractor	George J. Martin & Son, Inc., Albany, N. Y.
Heating Contractor	E. W. Tompkins Co., Inc., Albany, N. Y.
Sanitary Contractor	Trojan Hardware Co., Inc., Troy, N. Y.
Escalator Contractor	Westinghouse Electric Corp., New York City
Elevator Contractor	Otis Elevator Co., Albany, N. Y.

Pictured here is the State of New York's new Department of Civil Service Building which with a companion Department of Commerce Building will use 231,359 square feet of Milcor Celluflor.

AGAIN IT'S LONG-LIFE MILCOR CELLUFLOR

— this time for two, new State of New York office buildings



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Celluflor's tough, TI-CO galvanized skin doesn't crack or flake, even during the forming of Celluflor cells. This protection resists the abrasion of heavy traffic and storage during construction.



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TI-CO galvanizing protects after construction, also. The conditions inside Celluflor's cells remain the same, regardless of time, temperature, or humidity. Structural strength continues unchanged.

The floor of the future meets tomorrow's electrical needs today!

The New York State Department of Civil Service Building, shown above, has a built-in electrical capacity insurance policy — Milcor Celluflor. So has its companion project, the Department of Commerce Building. Both are in Albany, N. Y.

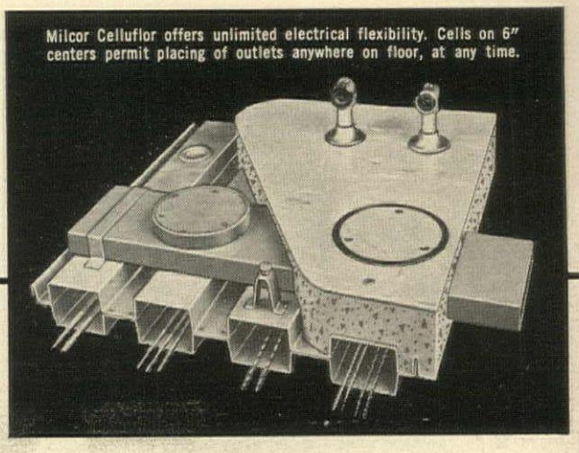
Far-sighted building owners appreciate this protection against obsolescence. They know that electronic progress means more office machines, better communications, more electrical circuits. They also know that healthy businesses require flexibility in electrical systems.

Milcor Celluflor's close-cell spacing provides great electrical flexibility. New outlets may be added virtually anywhere on the floor — or changed easily and inexpensively.

Besides, Milcor Celluflor speeds construction, permits earlier occupancy, requires less costly foundations and structural steel supports.

Include Milcor Celluflor in your planning. Latest bulletins and special assistance are available from us upon request.

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Milcor Celluflor offers unlimited electrical flexibility. Cells on 6" centers permit placing of outlets anywhere on floor, at any time.

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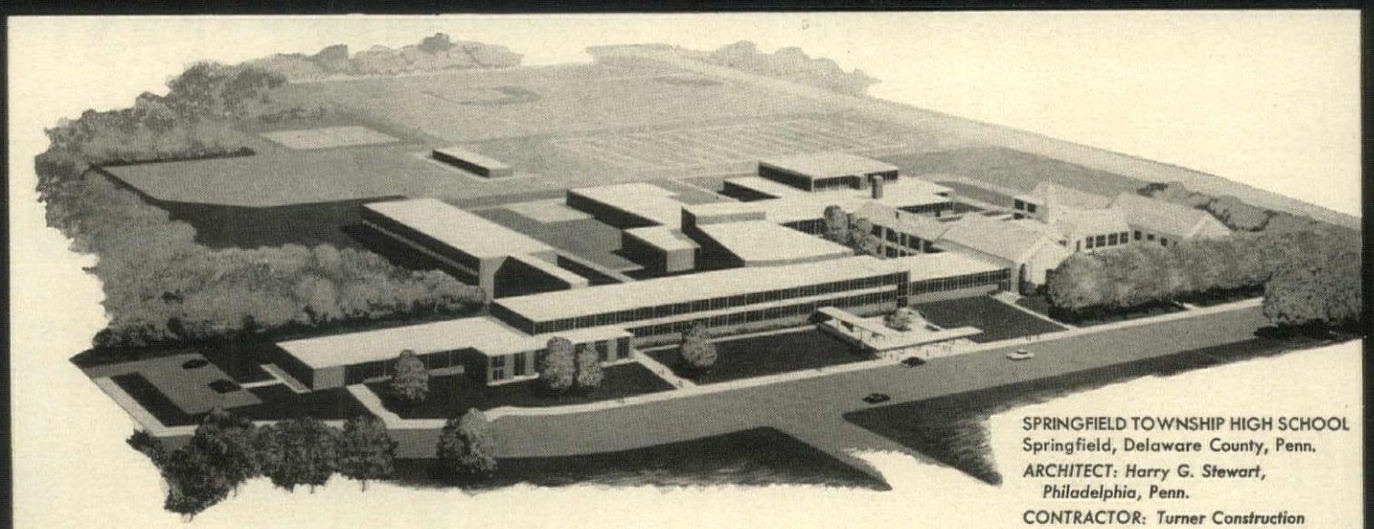
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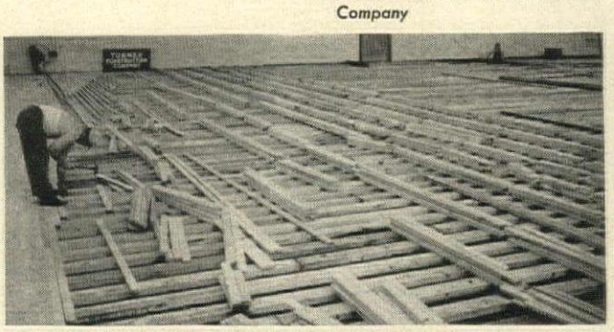
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Monsanto Penta Protects Wood, Insures Permanence

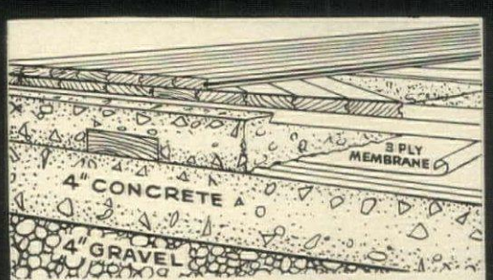


SPRINGFIELD TOWNSHIP HIGH SCHOOL
Springfield, Delaware County, Penn.
ARCHITECT: Harry G. Stewart, Philadelphia, Penn.
CONTRACTOR: *Turner Construction Company*

WOOD SUBFLOORING FOR THE GYMNASIUM in this new school was pressure-treated with Penta, before installation. Result: a clean wood floor protected against decay and insect attack. These natural enemies of wood are at work in every region of the U. S.! Penta protects wood best because it hits *deep*, repels insects and resists decay, stays locked in wood for years. Penta treatment multiplies the service life of exposed wood up to 4 times! That means longer building life, lower maintenance cost, greater client satisfaction with the buildings you design and build. For informative, FREE booklet on Penta and a list of 75 Penta pressure-treating plants in the U. S., mail coupon below.



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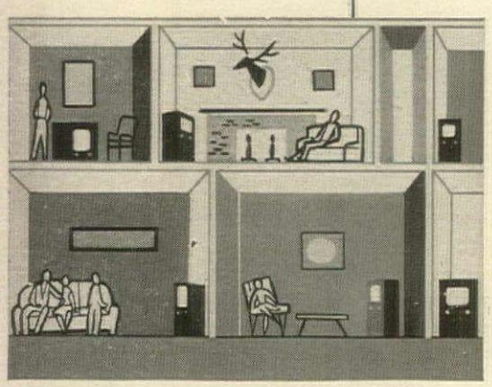
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LETTERS

Continued from p. 96

Problems of the new city

Forum:

Most of the discussion referred to the generally older cities and particularly those in the eastern part of the country. There is a major problem facing the fast growing and boom cities of the Southwest and West and perhaps the Southeast as well. In these regions of the country growth is taking place at such a rate that the problem of the downtown area is to some extent somewhat different than that of cities elsewhere in the country. There is the very real problem of building as well as rebuilding the downtown area to meet fast growth in the new metropolitan areas.

S. B. ZISMAN, *architect*
San Antonio, Tex.

A shift in city site

Forum:

I do not believe that a city's heart must necessarily be located at the original site of the city. Economic factors, such as favorable railroad grades, that dictated the original location of the city, are now largely overshadowed by automobiles and trucks operating on expressways, population redistribution and growth and the availability of unoccupied land for improvement.

In Los Angeles, at least, there is more office, loft and shop space downtown than the available parking spaces will serve. Gradually, as these buildings fall into disuse, they are torn down and parking lots spring up. I feel that we should not grieve over the loss of these buildings any more than over worn-out automobiles. They have served the purpose for which they were built, and the value of a building is not what it would cost, but what expense would be justified to replace it.

Several projects are being undertaken by the Community Redevelopment Agency in Los Angeles. This agency, using a small revolving fund and the city's right of eminent domain, is able to acquire and clear blighted property. The cleared land is then resubdivided, streets and utilities are relocated and reconstructed if necessary, and the land is then appropriately zoned and offered for sale to private investors. It is estimated that the sale price plus the increased tax revenue of the property, as redeveloped, will result in a net gain to the city within a reasonable period. If this is the case with the first projects, the way will be clear for some large-scale redevelopment.

ROBERT S. HENDERSON, *civil engineer*
Street and Parkway Design Division
Bureau of Engineering
Los Angeles, Calif.

continued on p. 104

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Midway Gardens Apts., Chicago. One of hundreds of successful Plaster-Weld installations. In this case, Plaster-Weld was used to *permanently* bond lime-putty coat *directly* to all concrete ceilings and columns. *Archts.:* Holabaird, Root & Burgee & Associates; *Genl. Contr.:* S. N. Nielsen Co.: *Plstg. Contr.:* McNulty Brothers Company. Many other examples of Plaster-Weld applications gladly sent on request.

Plaster-Weld is the scientific resinous water-emulsion bonding agent which gives you a guaranteed method of *permanently bonding* Gypsum, Lime-Putty, Acoustical Plaster and Cements to themselves . . . or *directly* to any structurally sound surface including—

Concrete ceilings, beams, columns . . . Plastered walls and ceilings . . . Stippled or textured walls . . . Painted or unpainted surfaces . . . Brick . . . Stone . . . Wood . . . Glass . . . Block . . . Metal . . . Slabs . . . Ceramic Tile

A PLASTER·WELD BOND *NEVER LETS GO!*

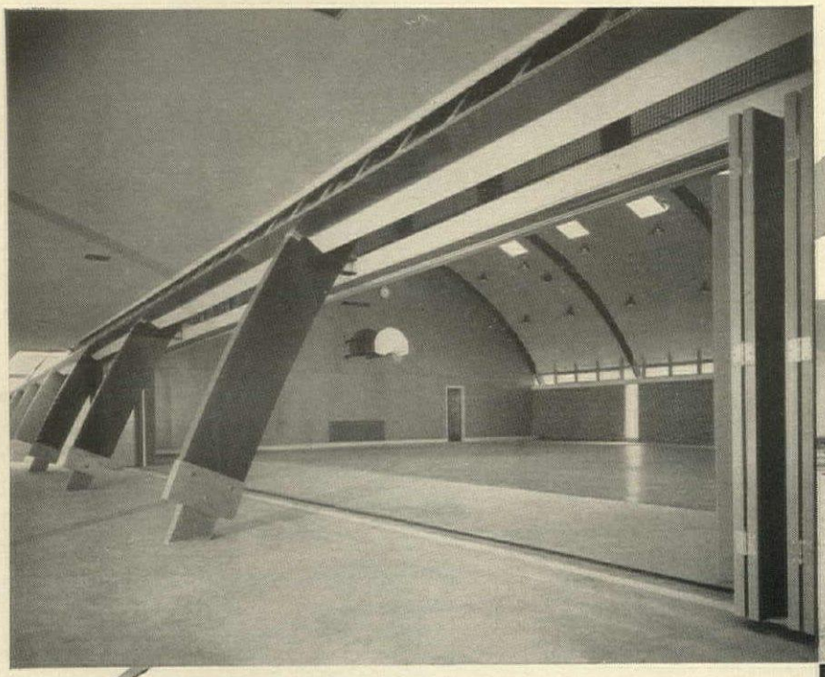
Plaster-Weld is applied with brush, roller, spray gun *directly* to most surfaces (old or new) without need for costly, time-consuming surface preparation. You cover with new material, as soon as touch dry (usually an hour) or several days later.

The bond you make is permanent, ageless . . . the bond itself is much stronger than the material being bonded. Equal bonding permanence all climates, all types of surfaces, all sorts of conditions.

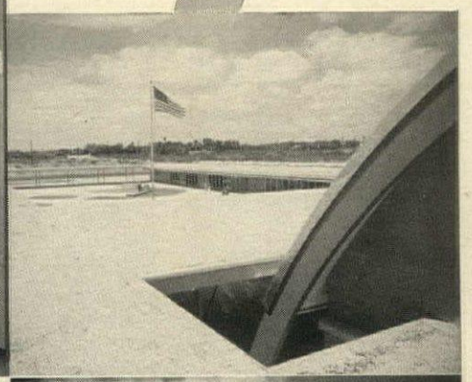
For details, see Sweet's File, write us direct, or ask your Building Supply Dealer.

LARSEN PRODUCTS CORP.,
Box 5756-B, Bethesda, Md.

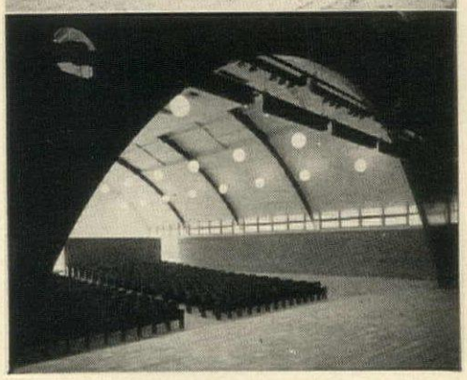
$10 Per Square Foot SCHOOL Uses RILCO ARCHES



modern, efficient design gains national attention







The Mirabeau B. Lamar Junior High School in Laredo, Texas, is unusual in several respects. It was built at the amazing low cost of only $10 per square foot. It incorporated several new design features which have attracted national attention. Using one of the most economical forms of Rilco Laminated Wood Arches, the architects have achieved an unusually interesting, attractive and practical result.

Architects Caudill, Rowlett, Scott & Associates, Bryan, Texas, and A. A. Leyendecker (Associate Architect, Laredo, Texas) are to be complimented on their fresh approach to the ever-present problem . . . low-cost building for maximum efficiency and attractiveness.

The Rilco Glued Laminated Wood Arches used in the construction of the combination auditorium and gymnasium of the school helped keep costs down because of: 1) low original cost; 2) ease of erection, pre-cut and drilled for connection hardware; 3) erected with local labor and equipment.

Rilco Arches are made of selected West Coast Douglas Fir. They are manufactured with modern precision equipment under rigid factory control, and wrapped in heavy water-resistant paper for shipping.

Rilco experienced engineers will be glad to consult with you about your requirements and give "on the job" cooperation. Write now for complete information on Rilco for your jobs.

RILCO works wonders with wood

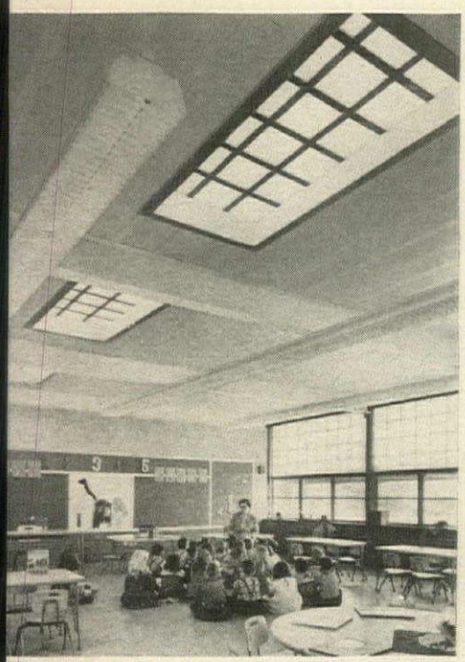
RILCO LAMINATED PRODUCTS, INC.

2524 FIRST NATIONAL BANK BLDG., ST. PAUL 1, MINN.

District offices: Wilkes Barre, Pa., Ft. Wayne, Ind., Manhattan, Kan.



The combination of light-directing glass block and vision strip keep brightness at comfortable levels, provide vision and ventilation.



Acting as a daylighting team the Toplite Panels and glass block provide sufficient daylight during normal days without need for artificial lighting.



Michener School, Adrian, Michigan. Louis Kingscott, Architect. W. N. Bjorklund, General Contractor.

Near the windows, or far from them, good daylight is everywhere

Light-Selective Toplite Roof Panels transmit cool, desirable daylight; reject hot, glaring sun. No longer is it necessary to confine close detail work to the area nearest the windows. Toplite Roof Panels permit daylighting of all building areas regardless of location or distance from exterior walls.

The prismatic glass units in O-I Toplite Panels "think" before they transmit the sun's rays. Needed North light and the soft low rays from the South are readily accepted. But rays from the high summer sun are rejected. Glare and heat of old-fashioned skylights are eliminated.

Toplite Panels may be installed in continuous strip, pattern, or in individual panels. Use a Toplite Panel as you do a lighting fixture.

The complete story of this great new advance in efficient utilization of free daylight is available in a new booklet on Toplite Roof Panels. For your free copy, write today: Kimble Glass Company, subsidiary of Owens-Illinois, Dept. AF-10, Toledo 1, Ohio.

TOPLITE ROOF PANELS
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO

They do it with KALISTRON®

(ANOTHER WELDWOOD PRODUCT)

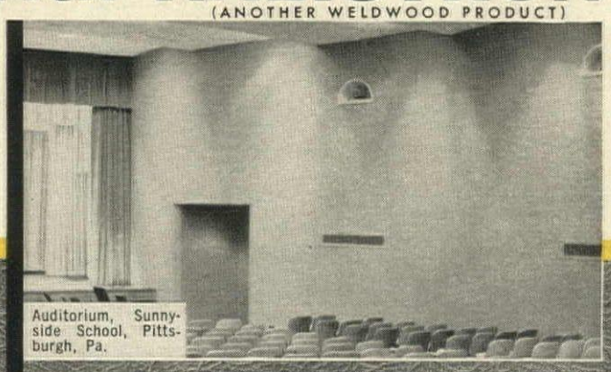
The operating rooms, recovery rooms and adjacent corridors of a hospital were in the planning stage. The architects were looking for a wall covering that combined beauty, durability, simplicity of maintenance. *They chose Kalistron!*

Heres why: The beautiful rich color of Kalistron is fused to the *underside* of transparent Krene,® which shields it like a coat of armor, from scrapes, scratches, stains, kicks.

It's so tough, so impervious to all abuse short of deliberate vandalism, that hospitals and schools use Kalistron to protect walls in the busiest areas; hotels and restaurants use it to keep walls fresh and clean.

Beds can bump it, hands can finger it, carts can run into it, but nothing can mar it — and a damp cloth wipes it clean.

You can choose from 33 decorator colors when you specify beautiful, rich-looking Kalistron. Available in several grades. For further information, send the coupon below.



Auditorium, Sunnyside School, Pittsburgh, Pa.



New York Infirmary. Architect: Skidmore, Owings & Merrill.



Crowell-Collier Pub. Co., New York. Architect: Leonard Schultze & Assoc.

—and they do it with WELDWOOD® FLEXWOOD®

Any wall is beautiful when you use the new improved Weldwood Flexwood. Because it is flexible, this richly grained wood paneling hugs curved walls as well as flat. You can even wrap it around columns if you wish. 40 beautiful woods to choose from, in both architectural and random grades. Use it in new construction, in alteration work — in homes, offices, banks, etc. Flexwood meets all fire code requirements.



N.Y.U.-Bellevue Med. Center, New York. Architect: Skidmore, Owings & Merrill.

Mail this coupon to "Wall Center, U.S.A."

UNITED STATES PLYWOOD CORPORATION

World's Largest Plywood Organization

55 West 44th Street, New York 36, N.Y.

United States Plywood Corporation
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New York 36, N.Y.

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Please send me additional information on
☐ Kalistron ☐ Weldwood Flexwood

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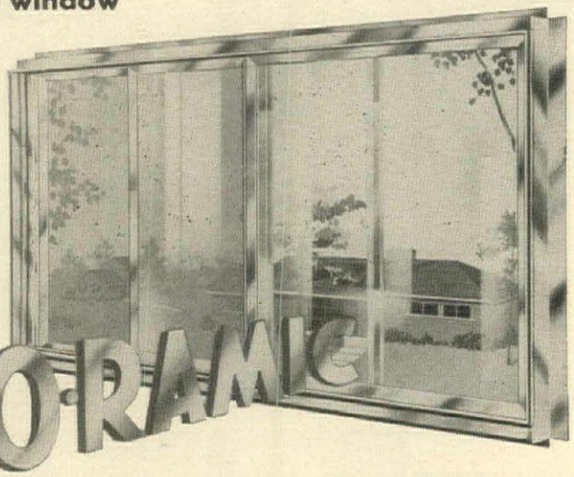
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TWO GREAT NEW WINDOWS by WISCO



View-O-Ramic

vented picture window



SLIDE-O-RAMIC

horizontal sliding window

The new Wisco horizontal sliding "Slide-O-Ramic"; and the new vented aluminum picture window, the "View-O-Ramic", are two new windows you will want to know about.

New in design, engineering and manufacture, these windows offer *profit* possibilities unmatched in their field.

WINDOWS YOU WILL WANT TO SPECIFY FOR PROJECT BUILDERS AS WELL AS CUSTOM BUILDERS

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WISCO ALUMINUM CORPORATION
3945 "A" STREET DETROIT (16) MICH.

write for brochures
and full information

LETTERS

Continued from p. 100

The downtown burden

Forum:

In spite of what is being done in Pittsburgh, Chicago and other cities, only a small fragment of the problem is being solved. I am fearful that unless there is a better understanding of the problem and future catastrophic effects if it is not speedily solved, that it will be too late in many large cities. There are too few taxpayers who realize that in an average large city approximately one-half of the taxes are paid by the Loop area. It will take only a very small percentage of recession in retail and other business to produce a drop in land value and a tax loss which can easily mean bankruptcy because the outlying and residential property cannot stand further increases in the tax rates. None of the suburban shopping centers are being planned with any other idea than a quick return by promoters, architects and retail businesses.

For example, the new shopping centers around Minneapolis and St. Paul will require some $70 million in retail trade to support them. Natural growth and expansion will probably account for $20 to $30 million. The balance must come out of present retail locations. The average taxpayer will ultimately have to make up the deficit caused by tax loss due to the shrinkage in business.

The ease with which suburban developments can be financed is probably the crux of the situation, and it is amazing to me that large companies, having a large stake in metropolitan areas of our cities, are making possible such easy money for developments which will unbalance the whole economic structure of our large cities.

ALBERT O. LARSON
Larson & Mclaren, architects
Minneapolis, Minn.

Downtown: everybody's problem

Forum:

One of the unfortunate features is the failure of people who have such a vital stake in downtown retail areas to recognize that serious problems are facing them. The competition of shopping centers and the trend toward decentralization of industry and other types of business from the central city may be a boon in disguise by awakening them.

The article should go a long way toward helping responsible citizens understand that the problem facing the central city is everybody's problem.

JOHN G. JEWETT, *vice president*
The Prudential Insurance Co. of America
Newark, N.J.

continued on p. 106



SURCO TERRAZZO type flooring is here tastefully blended with modern furniture to provide a cheerful and congenial atmosphere to this office lobby.

Although most of our floors are waxed this one has remained unwaxed since its installation nine months ago, yet it still retains a glossy finish.

SURCO TERRAZZO was applied ¼"-⅜" thick after the concrete slab was completely cured. In this particular installation no expansion joints were used. Drilling through the floors for telephone or electrical wiring presents no problem since SURCO TERRAZZO will not crack or craze from ordinary drilling operations.

For beautiful economical floors with resilience comparable to quality hardwood floors, use SURCO terrazzo-type material.

SURFACE COATINGS, INC.
110 Pear Street, S.E. • Atlanta, Georgia

See Sweets Architectural File for further information on SURCO products for home and industry.

SURCO

There's one way to be sure when you specify plywood for form work . . .

LOOK FOR THE DFPA* TRADEMARK!

DFPA® TESTED QUALITY

When you specify grade-trademarked fir plywood, you're sure of material manufactured under the rigid industry quality control program and independently quality-tested by DFPA* to protect the buyer. Here are grades expressly made for form work:

1. INTERIOR PLYFORM®—made with highly moisture resistant glue for multiple concrete form re-use.

2. EXTERIOR PLYFORM®—made with waterproof glue for maximum form re-use.

3. OVERLAID PLYWOOD—glossy, smooth, tough resin-fiber surface fused to Exterior plywood. Gives greatest re-use plus smoothest concrete. EXT-DFPA® on panel means 100% waterproof glue.

EXT-DFPA

*DFPA—Douglas Fir Plywood Association, Tacoma, Wash. is a non-profit industry organization devoted to product research, promotion and quality maintenance.



LETTERS

Continued from p. 104

The virtue of decentralization

Forum:

It would be shortsighted to attempt to combat the trend toward decentralization, because without the development of outlying commercial and industrial areas, any relief of urban strangulation would be only temporary.

The ultimate effect of wise decentralization would be the development of federated cities in which a maximum of governmental jurisdiction would be given to constitutent communities, and in which employment could be found near each community. There would, of course, be communities near the "core" sufficient in number and size to accommodate most of those employed in the "core area." If and when this is accomplished and transportation facilities are adequately provided, allowing the "core" to serve to the entire expanded metropolitan area more effectively, then land values in the "core area" might be restored and placed on a sound foundation.

By the removal from the "core area" of all activities which do not serve its essential function, such as industry and wholesale distribution, much of the traffic which strangles would be eliminated. This combined with the by-passing of the "50% to even 65% of the automobiles which have neither origin nor destination in the central district" would leave more room on the streets in the "core area" to accommodate an increased number of customers, clients and patrons.

And redevelopment of the city centers which neglects to consider dispersion as a means of protection against aerial bombardment, however, is unrealistic.

C. H. COWGILL, *head*
Department of Architecture
Virginia Polytechnic Institute
Blacksburg, Va.

Forum:

Three of the 18 points made by the panel struck me as being particularly key ones on which I have seen heartening psychological changes in the past two years. These are the general realization that "deplorable areas" are a boon to downtown rebuilding, the combination of civic with private buildings, and the conception that downtown centers should be correlated centers.

I know, from personal professional experience, that the panel is right.

I am convinced that the movement to the suburbs and the "threat" of large outlying commercial areas will, in the long run, result in revitalization and badly needed building, traffic and landscaping improvements in America's downtown areas.

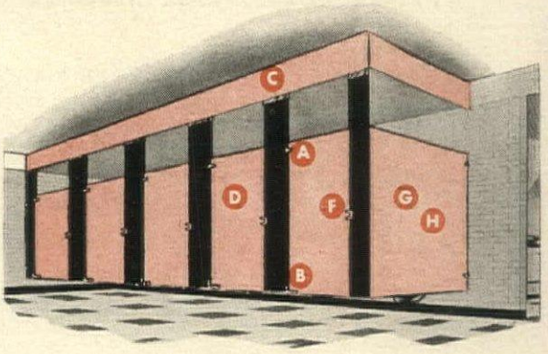
WELTON BECKET, *architect*
Los Angeles, Calif.

No. 4
OF A SERIES

WHAT TO LOOK FOR IN QUALITY TOILET COMPARTMENT CONSTRUCTION

Many major differences that give you your money's worth in satisfactory service!

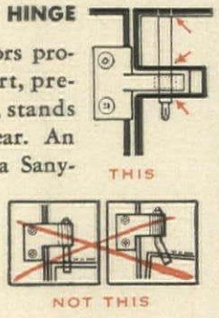
Check QUALITY CONSTRUCTION FEATURES YOU WANT IN TOILET COMPARTMENTS



Quality construction features set Sanymetal Toilet Compartments apart from ordinary products, make them last longer, make them give more satisfactory service. "Any metal toilet stall" is not *Sanymetal*. Use this check list to discover the many *extra* quality features Sanymetal offers.

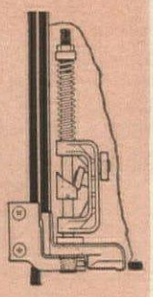
A INSET TYPE TOP HINGE

on all Sanymetal doors provides 3-point support, prevents misalignment, stands abuse, eliminates wear. An adult can swing on a Sanymetal door without harming it. (*See advertisement No. 2, this series**.)



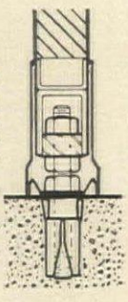
B FULLY CONCEALED BOTTOM HINGE

(by test proved to give over 301,000 cycles of use without noticeable wear.) Controlled-action positions door, fully bearingized – always works easily. Door does not rise or lower as it swings. (*See advertisement No. 4**.)



C TROUBLE-FREE FLOOR CONNECTIONS

by a Sanymetal patented method produce firm, rigid connections for floor-braced types. Fittings are heavy-duty and concealed. Ceiling connections are same design, produce same rigid strength for ceiling-hung units.



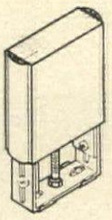
D WELDED DOOR UNIT

construction provides a door panel that stays flat without wind and in line even when it is severely abused. Door surfaces are welded together to form one rigid, permanent unit. (*See advertisement No. 3, this series**.)



E QUICK, PERMANENT LEVELING

by built-in jackscrew saves field labor. Screw supports compartment weight direct to floor, cannot slip. The compartment is held level permanently. (*See advertisement No. 5**.)



F PACKAGED HARDWARE SPEEDS INSTALLATION

Hardware for each panel, door, pilaster in separate, plainly labeled package speeds installation, prevents loss, saves installation dollars. Like most Sanymetal features, this advantage costs you nothing.



G PORCENA, SANYMETAL'S VITREOUS PORCELAIN

on steel, meets Porcelain Enamel Institute standards for genuine, acid-resisting porcelain enamel. Porcena has the hardness of glass, the natural strength of steel. It never requires refinishing. (*See advertisement No. 1**.)



H CERTIFIED BASIC STEEL AND FINISH QUALITY

Label on Sanymetal "Tenac" certifies use of furniture steel that is galvanized and Bonderized** with two coats of quality synthetic enamel. Nothing less lasts as well as this 4-fold finish.



***Bonderite*, a product of the Parker Rust Proof Co.

I STAINLESS STEEL FLOOR MOP MOLD

assures long life and attractiveness, withstands exposure to cleaning materials, acids, scuffing and abrasion. It is held tight to the floor by hidden spring clips.



**See Sweet's, or send for Catalog 92, describing all Sanymetal Compartments. If you wish, we will send other advertisements in this series about quality construction details.*

When you buy or specify toilet compartments—be sure they are SANYMETAL*—you have that choice.*

THE Sanymetal® PRODUCTS COMPANY, INC.

[illegible] ROAD, CLEVELAND 12, OHIO

How To Specify An Abrasive Tread

that will last the life of your building

clip and file

There are four factors that make an abrasive metal tread safe *and* durable: (1) Weight of the abrasive granules per square foot, (2) size of the granules, (3) uniformity of distribution, (4) average number of granules per representative square.

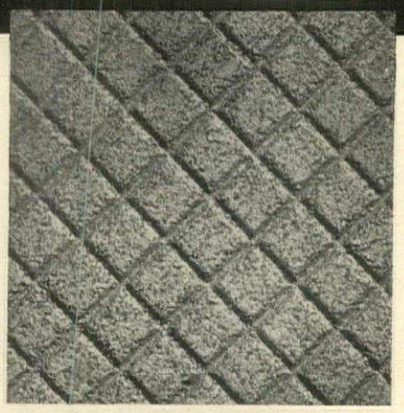
Feralun abrasive metal treads are quality-designed and made. They have a full measure of non-slip granules. And they are cast to last the life of your building. For handy reference, here's a simple short form specification:

Treads, Thresholds, Elevator Door Sills, Floor Plates, Trench Covers – Exposed wearing surface to contain not less than two (2) ounces per square foot of abrasive granules embedded in the top metal surface not less than 1/16 inches while the matrix is in a molten state. Size of non-slip granules shall range from #16 to #24 and distributed uniformly over the surface in such a manner that not less than an average of ninety (90) individual granules can be counted in any three representative 1/2" x 1/2" squares of any portion of the finished surface.

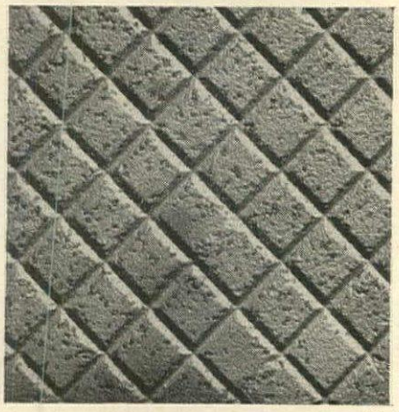
Pattern of finished abrasive surface shall be either "hatched", "fluted" or "plain", as required. Of (Feralun, Alumalun, Bronzalun, Nicalun) non-slip abrasive metal, as fabricated by the American Abrasive Metals Company, Irvington, N. J., or of approved equivalent in kind, quality, function and characteristics.

Why FERALUN provides lasting safety

Here is an unretouched photograph of a *Feralun* tread taken after acid treatment. (Paint is removed and acid is used to eat away the metal base so as to isolate the actual abrasive content of the tread.) Note the full and even distribution of abrasive—for greater safety, longer wear.



Here is an unretouched photograph of an abrasive tread, purchased on the open market of the type often offered as an equal of Feralun, after the identical acid test. Note the meager amount of abrasive and spotty distribution.



SEE SWEETS CATALOG—12b/Am.

FERALUN

AB 125

AMERICAN ABRASIVE METALS CO. • IRVINGTON 11, N. J.

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the magazine of building

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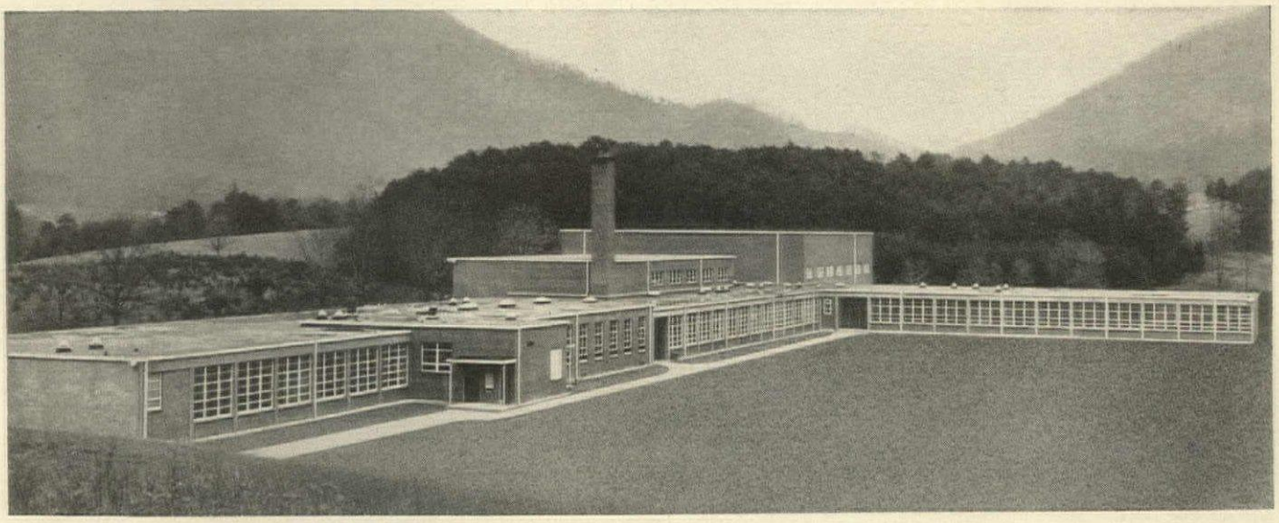
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N. Carolina School Board Specifies Combustioneer Stokers In New 5-Building, $3,235,000 Program!



Buncombe County School Board bases choice on Combustioneer's patented respirator, extended worm gear features, low initial cost.

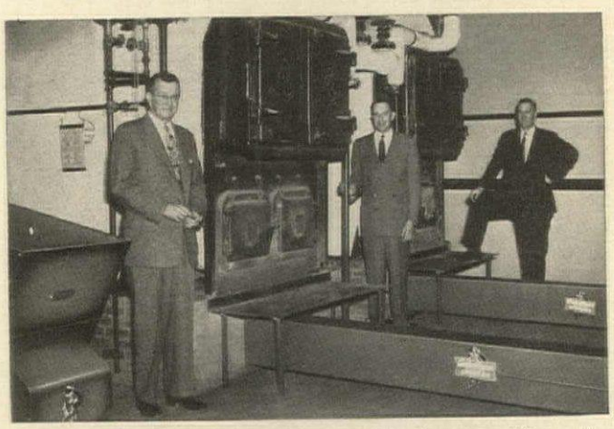
In the past 25 weeks, five of the most modern, up-to-date school buildings to be found anywhere in the nation have opened their gleaming doors to more than 3,000 students in Buncombe County, North Carolina. Over $3,235,000 have gone into this new building program . . . with the school board, the architects and the builders working hand in hand . . . assuring each voter that every tax dollar is getting a full 100c worth of school.

A. C. Reynolds High School *(above)*, located in Biltmore, is certainly one of the most beautiful of all. Designed by the firm of Lindsey Madison Gudger, Asheville architects, the building boasts of 72,000 square feet of functional floor area—and was "delivered" to the school board early in 1955.

All five of these new Buncombe County school buildings are heated with the latest model Combustioneer Bin-Feed Stokers!

Combustioneer Stokers were the natural selection. Exclusive, patented features contained only in Combustioneer Stokers provide the most even, constant, superbly economical heating systems available. The *Agitating Transmission*, for instance, keeps the fire-bed open and free-burning. The famous Combustioneer *Automatic Respirator* controls the air delivery for maximum combustion and smoke-free stacks. (Heating engineers are overwhelmingly enthusiastic about these two exclusive Combustioneer features!)

There's a Combustioneer Hopper or Bin-Feed Stoker just right for any application—and they range in size from 9 to 1,000 lbs. per hour. So, for the very latest in economical heating, with savings up to 25% and more, write today for Combustioneer's new folder "The Buncombe County Story"—which gives factual data on these five new school buildings.



Shown are (right to left): Mr. T. C. Roberson, Superintendent of Buncombe County Schools; Mr. R. A. Tomberlin, Assistant, and Mr. Oliver Spencer, Jr., Combustioneer District Manager for North and South Carolina. Mr. Roberson gave four reasons for the board's selection of Combustioneer Stokers: (1) Price, (2) Extended Worm Gear, (3) Automatic Respirator, (4) Combustioneer's Performance.

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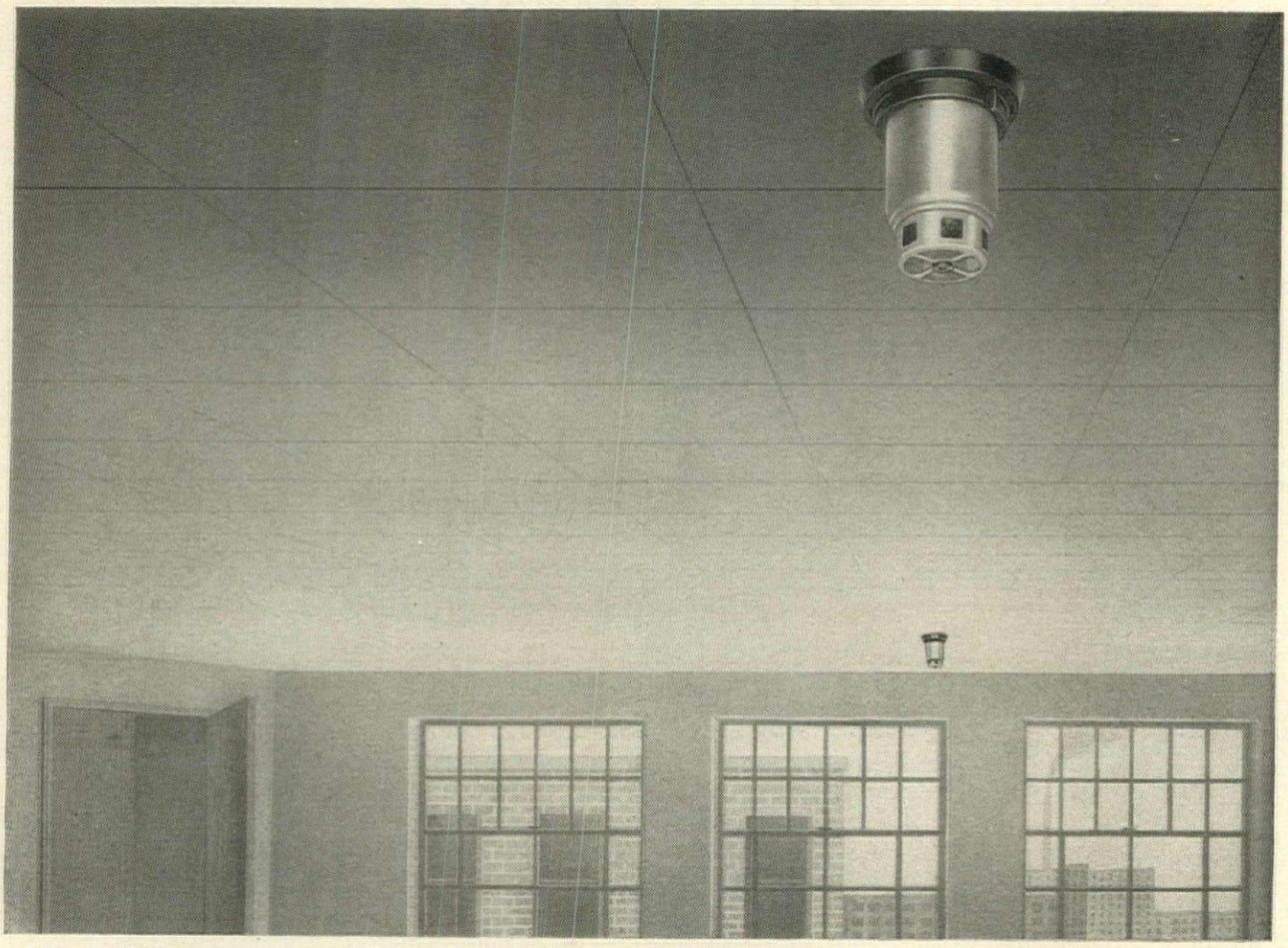


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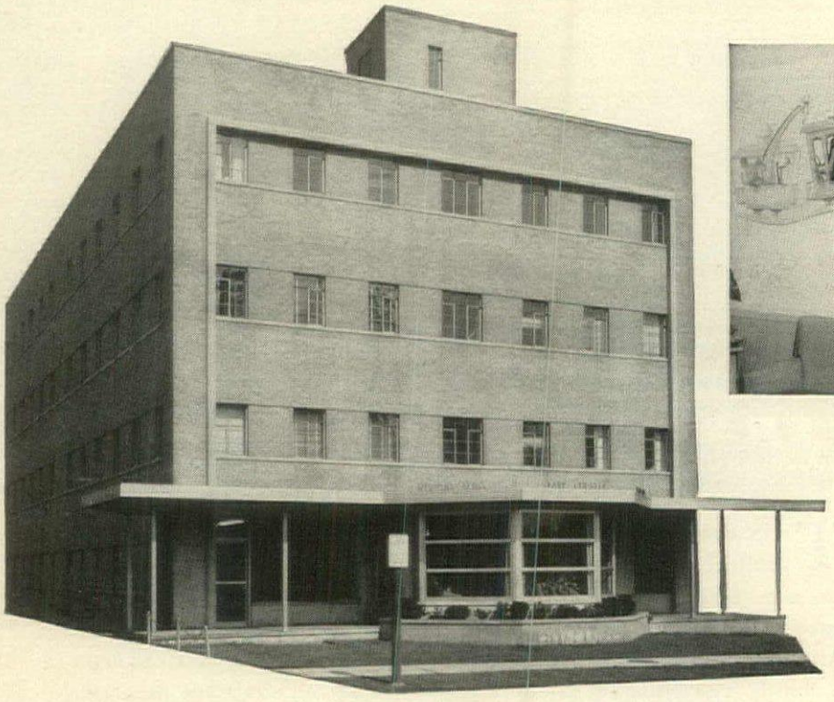


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for low-cost, remarkably flexible control of MULTIPLE – ZONE air conditioning systems!

Rarely does a single building have the many varying temperature requirements of a medical center. In this new five-story Park-Chester Medical Building, for example, there are 54 zones for the 32 suites occupied by physicians and dentists. Many of the suites have an inner and an outer zone so outside treatment rooms can be kept warmer than inside waiting and consultation rooms. Heating and air conditioning must be controlled to meet the different needs of laboratories, X-ray rooms, lobbies, lavatories, reading rooms, secretarial spaces. To complicate the problem, this building owner permitted tenants to custom design their own suite layouts before construction started, so room sizes and types vary.



Park-Chester Medical Bldg., Cleveland, has multiple-zone, year-round air conditioning system. *Architect:* SAMUEL K. POPKINS. *Heating & Air Conditioning Contractor:* REFRIGERATION SALES CORPORATION, Carrier Distributor for Northeastern Ohio. *General Contractor:* WILLIAM PASSALACQUA BUILDING CO.



Nursery-rhyme figures (left) on gay pastel walls intrigue both parents and children who are waiting for attention in office suite of two pediatricians.



Surgeon's waiting room (right) has warm-looking wood paneling, comfortable modern furnishings, an inviting, home-like atmosphere.

How Barber-Colman can help you solve medical building problems . . .

So outstanding were the results of the control system developed for this Park-Chester Medical Building that the same techniques were specified for other medical centers in Cleveland listed below. And this same automatic control system is being used extensively throughout the country with multiple-zone, blow-through fan units for year-round air conditioning of several zones or different floors of the same building. Using steam or hot water, and chilled water or direct expansion coils, the one compact unit supplies conditioned air in varying degrees to each zone, automatically adjusted according to season, internal loads, solar exposure, and requirements of occupants. Only with the speed, flexibility, and positive operating characteristics of electrical components are these satisfactory results possible. Let us help you custom-tailor installations to individual needs — see your nearby Barber-Colman application engineers or write us.

LITERATURE KIT — get literature kit showing complete array of electric controls available for multiple-zone systems. See how "Control Centers" provide the finishing touch to an advanced, simplified technique

"CONTROLS BY BARBER-COLMAN" is becoming a by-word in multiple-zone air conditioning installations in large or small buildings in the Cleveland area. These include:

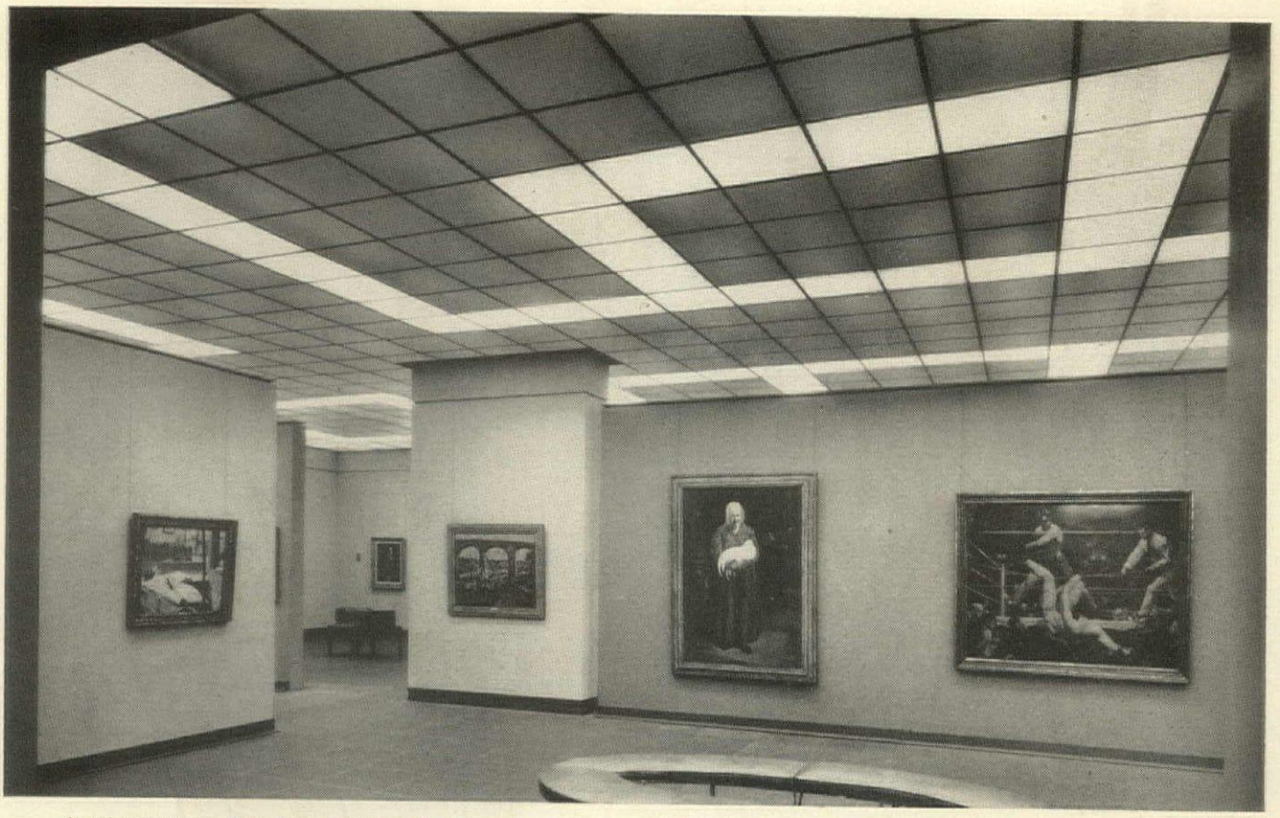
Garfield Hts. Medical Building
Parma Medical Building
Shaker Hts. Medical Building
Shaker Medical Building
University Medical Building

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In this painting gallery at the Whitney Museum, the panels of Alba-Lite are dimmed to show the location of the Fota-Lite panels. Louvers are photographically produced in Fota-Lite to transmit light at a 30° angle in this installation. Direct illumination on vertical surfaces at eye level totals 65 foot-candles. Fota-Lite also comes with louvers designed for 45° cutoff.

Whitney Museum of American Art, New York
Architect: Auguste Noel, A.I.A.
Lighting Consultant: Thomas Smith Kelly
Fixtures: Century Lighting and Rem-lite, Inc.

How the new Whitney Museum lights its galleries

Luminous ceilings in the new Whitney Museum of American Art in New York create an environment of beauty for the appreciation of beauty.

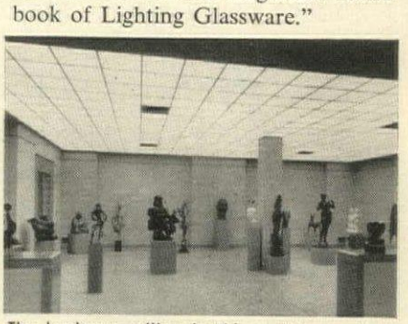
And they provide almost natural light illumination. *In the painting galleries,* two systems of lighting are combined in one luminous ceiling. The entire ceiling is made up of 24″ x 24″ panels of Corning Lighting Glassware, framed in metal muntins and suspended from the structural ceiling.

Panels of Corning Alba-Lite provide low brightness illumination for the central areas. Panels of Corning Fota-Lite direct lighting to vertical surfaces where paintings are hung.

In the sculptural gallery a luminous ceiling of Alba-Lite transmits soft, glare-free lighting. At certain points, ceiling panels can be removed so that bullet spotlights or other special lighting can be used to emphasize some special piece of sculpture.

These functional, flexible lighting installations are outstanding examples of the almost limitless range of application possible with Corning Engineered Lighting Glassware. From large 36″ x 100″ panels of Alba-Lite to small 6⅜″ Lenslites, you may choose lighting glassware designed specifically to meet your need.

You will find Corning Engineered Lightingware in your Sweet's Catalog, or for complete specification plus technical data, write for your free copy of the "Architects and Engineers Handbook of Lighting Glassware."



The luminous ceiling in this sculpture gallery is of Corning Alba-Lite—a light opal glass designed especially for smooth diffusion and excellent brightness control. Alba-Lite is not color selective.

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The order form on the facing page shows how easily FORUM fits into even the most modest Christmas budget.

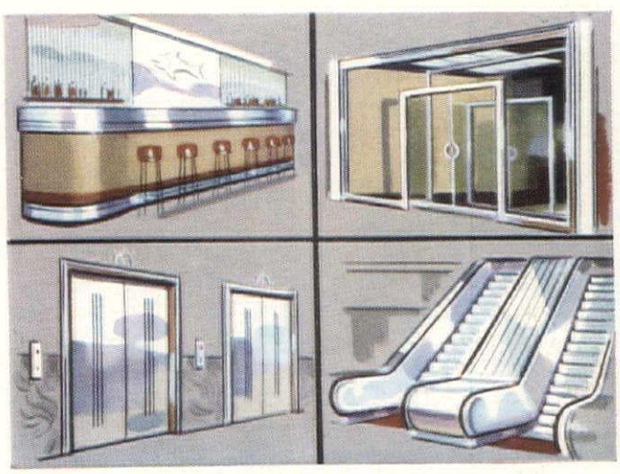
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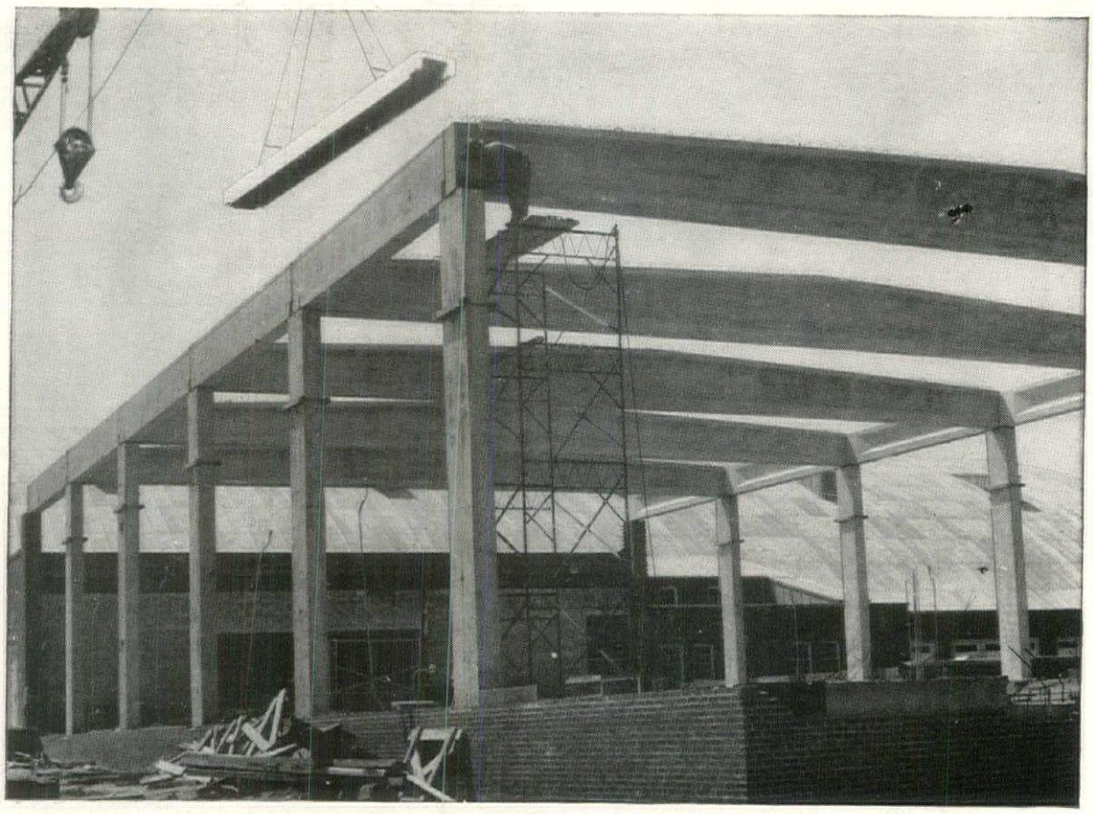
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PREFABRICATION... *summa cum laude*

● By making possible lighter members and longer spans, prestressing adds a new dimension to the high economy potential of precast concrete.

Precast, prestressed girders for this 75′ x 140′ Swimming Pool Wing to the Athletic Activities Building at the University of Maryland are 75′ long, 36″ deep at ends, 4′ 7″ at center, average depth-to-span ratio approximately 1:20.

All other structural members—the 14″ x 32″ x 23′ columns, 14″ x 36″ x 23′ spandrels, and the 10″ x 24″ x 23′ channelcrete lightweight roof slabs —are precast reinforced concrete.

Designed for span and load, these factory-made members were produced to closest tolerances by the Formigli Corporation, Berlin, N. J., for fast erection—"field practical" is the term for it. Prefabrication with a *summa cum laude!*



UNIVERSITY OF MARYLAND; Swimming Pool Wing

Architect:
HALL, BORDER & DONALDSON; Baltimore, Md.

Structural Engineer:
CARL HANSEN; Silver Spring, Md.

General Contractor:
BALTIMORE CONTRACTORS INC., Baltimore, Md.

Prestressed Members Made and Erected by
FORMIGLI CORPORATION
Berlin, N. J. . Philadelphia, Pa.

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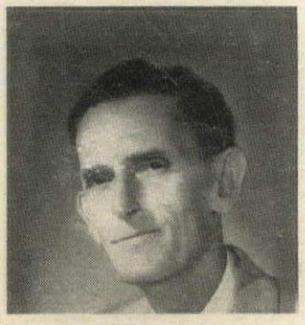
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architectural **FORUM**
the magazine of building

Men behind the blueprints in this month's FORUM







Photos by
*Sol Libsohn—*FORTUNE
Nicholas B. Dean
Richard C. Borgeson

CLIENT: J. Irwin Miller, industrialist and banker, is the quiet force behind many of the striking new improvements in his home town of Columbus, Ind. (p. 158). For his own building projects and those of the community he has helped bring in top architects. He wanted the new Irwin Union Bank building, designed by Eero Saarinen & Associates, to be both up-to-date and as inviting as the old country store it started in, and the new Cummins Engine factory, by Harry Weese, to convey the company's philosophy right down to its trademark and letterhead. Miller also heads a mayor's committee for new rental housing and is now building his own modern home by Architects Saarinen and Alexander Girard.

ARCHITECT: Eero Saarinen first met Banker Miller (above) when Saarinen and his father were working on Columbus' Church of Christ with Miller and his uncle. When asked back a decade later to design Miller's bank, Saarinen brought along fresh memories of a trip to Spain and the "wonderful little squares of Seville." The new bank (p. 160) is in effect a pleasant village square, surrounded by trees, with a low pavilion in the middle. The Saarinens, with Perkins, Wheeler and Will, were also architects for the famed Crow Island School in Winnetka, Ill. (p. 130). Like the Church of Christ, of about the same vintage, Crow Island has aged well and contributed much to building progress.

ENGINEER: V. K. Boynton is responsible for the unusual structure which plays such an important part in the design and operation of the Layton School of Art in Milwaukee (p. 172). Because this structure is of carefully formed concrete, it requires no plaster or trim. Because the concrete floors are cantilevered outward 24′, there are no exterior columns or walls to cast shadows. Because the roof slab is tilted upward, the top-floor classrooms gain still more daylight. Finally, Boynton notes, because the concretework by Siesel Construction Co. "was so excellent, only very small areas of the building have been painted." Pleased with the form of Boynton's structure, Architect Miles E. Belongia let it show through the building's end walls.

THE ARCHITECT TODAY

Beset by change—and changing fast himself—he stands atop the dilemmas of the building industry

ARCHITECTURE IN AMERICA—PART II

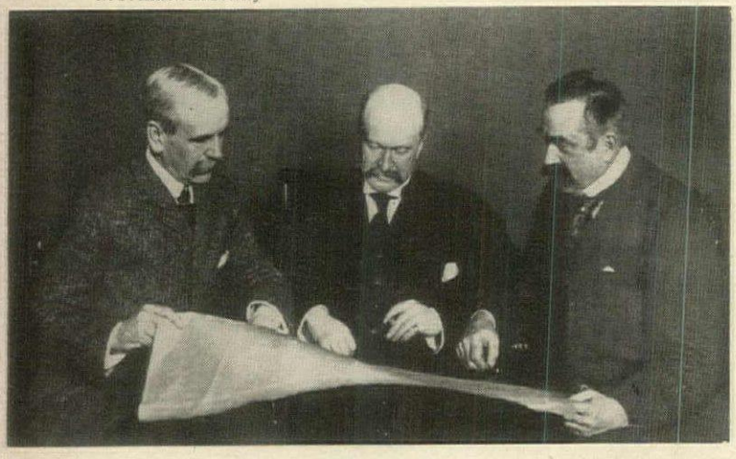
Another in a series of articles exploring where architecture stands in America and what is happening to change its future

Within the past half-century so many new groups of people have begun to employ the architect that it is little wonder that relatively few understand what he is and how to use him.

The architect himself has faced such transformation since the days when Charles Follen McKim and Alexander Johnson Cassatt sat down to plan the Pennsylvania Station over a glass of Madeira, that he does not always understand his own new status.

The change in clients, the change for the architect, grows out of the new impact of the industrial revolution on building. The revolution has been slower in conquering this field than others because building is more complex and unwieldy in its products. Yet today construction grows almost as fast as the possibilities of "total" destruction do. Long ribbons of superhighway and throughway drop suddenly into place, and instantly the rubber-borne parade begins thundering over them. Great new dams appear not only in the US but in places around the globe so primitive that stones and gravel are carried in baskets on robed workmen's heads. Housing is put together so rapidly that every year the US builds

N. Y. Historical Society





1905: famed Architects McKim, Mead and White ponder a design.
1955: Shirtsleeve team of Skidmore, Owings & Merrill principals, designers, specialists, with clients ponder a mock-up test building (Architect Gordon Bunshaft gesturing at left of group).

Prepared by FORUM's editors with the aid of Louise Cooper

homes for the equivalent of a new Cleveland added to a new Detroit, St. Louis, Pittsburgh, and San Francisco. New plants grow so fast that by now the stretch from Detroit to Chicago looks from the air like one continuous corridor of them. Democracy and the immense productivity of industry have for the first time in history produced something like a "total" market. This revolution has led to an idea as radical as the idea of "total" war: the concept of "total" construction and with it the possibility of "total" architecture.

In their grander moments architects now speak of doing things to "man's physical environment"—which is something no dictionary or encyclopedia even remotely hints at in any recorded definition of architecture. The British *Architectural Review*, in a severely critical mood, makes an esthetic judgment on the whole of "man-made America," and again cries "outrage" on the whole man-made scene at home. Any new theoretical definition of architecture can no longer describe the art in the old way as a quality that attaches to "buildings." It must take into account that, wherever man deliberately changes his surroundings or qualifies his environment *as a setting*, there is architecture in the effort. It may be by putting up buildings, or towns, or roads, or dams, or irrigation areas, or sections of contour-plowing. To the degree that the pattern gives visual pleasure by its fitness and harmony the result is architecture; and again to the degree that climate is changed agreeably indoors or out by deliberate art, the satisfaction of all the senses and the mind is again an effect of architecture.

Having so grand a concept is, however, something very different from being able to realize it, as every practicing architect knows to his deep sorrow.

The architectural profession in the US is a tiny group of 22,000 registered architects and their employees—a profession one eighth as big as the 181,000 lawyers and judges, one ninth as big as the 192,000 physicians and surgeons, roughly one twenty-fifth as big as the 534,000 or so practitioners which the Department of Commerce lists as engineers of one kind or another. On an average you would have to pass 4,500 adults on the street before you would meet a single architect. Of the 22,000 architects, the 10,000 corporate members of AIA handle more than three quarters of the work. And among these, only a few hundred handle close to half.

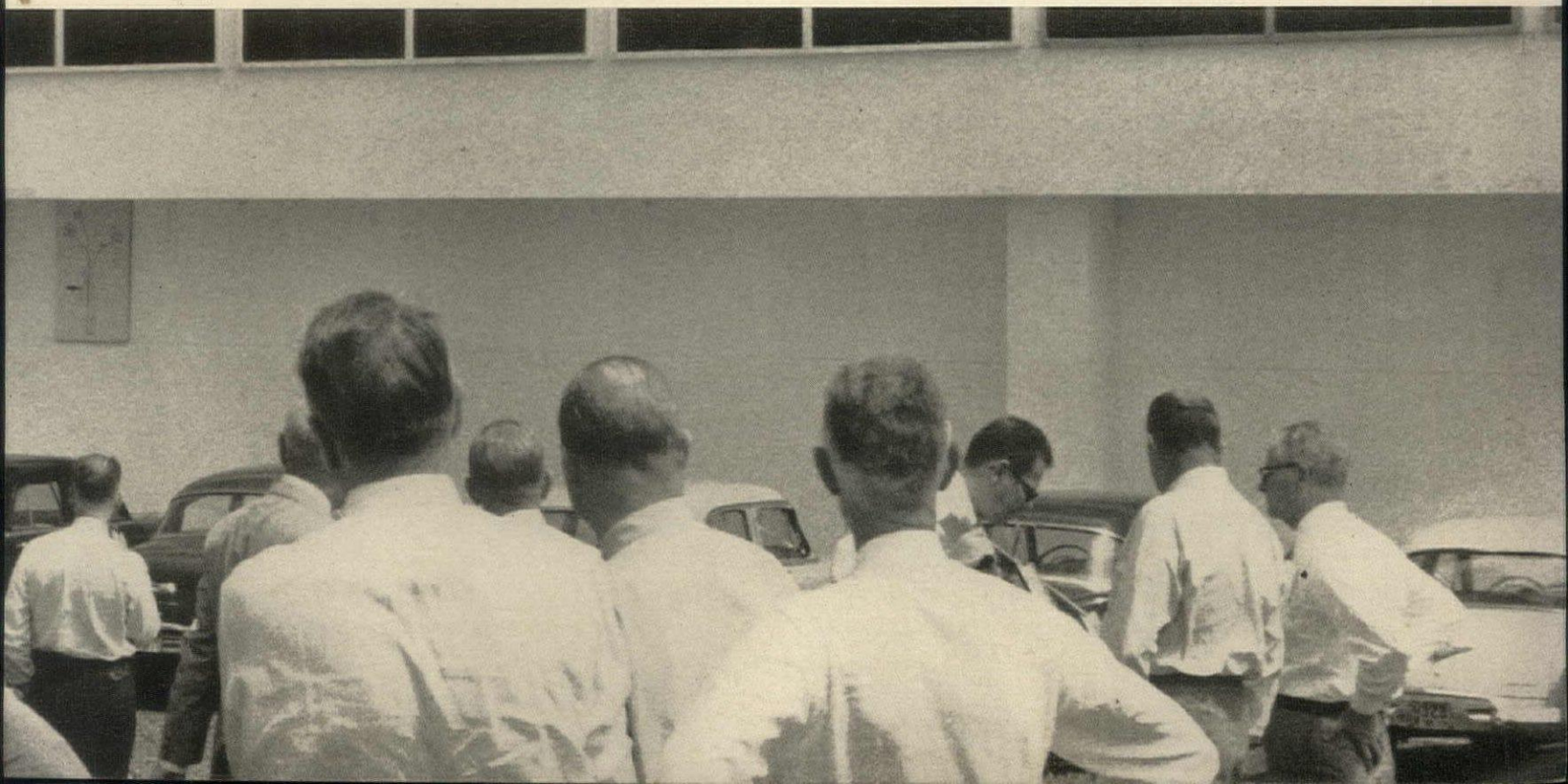
For this tiny profession to try to deal with the vast new potential of a $40-billion-a-year industry, obviously it must deal with a great many multiplications, and it must deal *in* a great many multiplications.

He is the organizer

Traditionally a single client came to a single architect, as Pope Leo came to Michelangelo, and asked for the design and the building supervision of a single great fabric as the Pope asked for St. Peter's. What it was necessary to know of the building art could be compressed into a single volume by Vitruvius. Workmen were a small army but the number of crafts was quite limited. One generation—30 years—ago, reality was still not unrecognizably different from that tradition.

Today the client may easily be hydra-headed, a corporation; the building arts have so multiplied that there

Victor Jorgensen



are separate fields of foundations, structure, heating and cooling, plumbing, illumination, acoustics, elevatoring, and more—with an engineering profession attached to each, a lore consisting of books and scientific papers by the hundred, and a separate work force. There has been a multiplication too in other members of the team besides the engineers: in planning specialists, zoning specialists, code specialists, different kinds of bankers and insurance men, different kinds of realtors, leasing agents, managers, government authorities and labor leaders.

No great thinking effort is required to realize that the tiny architectural profession has had to shift from reliance on complete individual creation to the art of organization.

Instead of solving every problem of design and erection, the architect, if he keeps his authority, must find and organize and mediate among the men who will handle the separate component problems, for example the various engineers, and bring into harmony the answers that they bring him. He must specify fewer and fewer products made to special order, choose instead among thousands of ready-made products, all along the line.

It is probably because the architect has not made himself adequately understood as the *organizer* of a design and building operation that society does not adequately pay him. The low income of architects (median incomes in 1949 for AIA members started at $5,400 for beginning independent practitioners and reached a peak of only $14,000 at the age of 62) means that they are classed by the people closer to teachers, preachers and artists than to doctors and lawyers. Some 48% of all AIA members in private practice make less than $10,000 a year. Non-AIA members do somewhat worse.

Most of the profession is operating within a fee structure defined in a time when a Beaux-Arts degree, a dinner jacket and an elegant way with the ladies was enough to set up a comfortable practice. More to the point, it is operating within a structure crystallized when architecture was at the low estate of preoccupation mainly with the decoration of building walls. It is somewhat as if automobile-makers were trying to sell the planning that goes into a truck for the price of planning proportionate to a dray. For taken at their AIA-suggested level, percentage fees are seldom adequate to cover the kind of exhaustive research and basic study that many first-rate architects insist—or would like to insist—on giving each new building problem: the kind of work that produces design innovations which pay off, sometimes by slicing millions from the cost of initial construction, sometimes by economies in operation which, say, in a factory or store building may turn out to be priceless competitive advantages.

The idealism in architecture is high, and the devotion of most practitioners to their work outstanding. The architect's tendency to sink vast amounts in design studies is attested by an expert witness—Booz, Allen & Hamilton, an upper-bracket management engineering firm which has recently been asked by several architectural firms eminent in design to look into their difficulties in running an equally distinguished accounting balance. "Many architects get so preoccupied with their clients' problems and so interested in the results they can obtain for them that they are quite unable to limit their expenditure of time and effort to what would be revealed as prudent by reasonable accounting," Booz, Allen & Hamilton say.

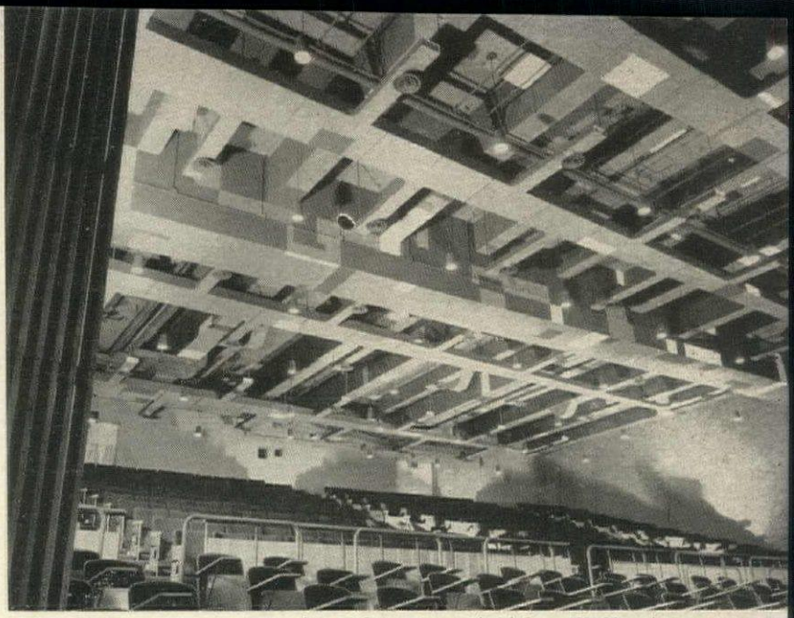
He has a service to render

What is it anyway that a client can expect from his independent architect? Before dealing with variations it may be well to describe quickly the well-known norm, dealt with at more length in the large Carnegie-financed volume of the AIA, *The Architect at Midcentury*. First the architect explores building need and, as the book coyly remarks, there is no reason why he might not on occasion suggest that a building is needed. He is allowed then to offer his services but not to compete with other architects on a fee basis. Once retained, the architect first analyzes the problem with the client, then submits preliminary schemes for the project until the client accepts one.

This is actually a deceptively simple way of describing a very complex procedure. Preliminary investigation and research services, for instance, commonly include an analysis of the client's probable building needs over a period reaching far into the future, whether the problem is a house, a hospital or a giant factory. They commonly entail advice on site selection. The program and site conditions are then often translated into a number of alternate schematic plan studies. A preliminary budget is prepared and discussed. During the following step of preparing preliminary drawings and specifications, the architect coordinates the planning of specialized engineering services with the basic building plans, and discusses the plans and specifications with all public authorities having jurisdiction over the building project. He obtains cost estimates on the basis of preliminary drawings and outline specifications. He is often able to lend valuable help in presenting the program for financial approval by public or private groups.

Once the preliminary stage is complete, the architect embarks on "working drawings" which are the contract documents that will guide contractors in their bidding and execution, along with a set of specifications, the result of the architect's research on materials and equipment and his consultations with knowledgeable clients and builders. He works again with any engineer





Architecture as decoration was dramatized in Potter Palmer mansion ceiling. Architecture as organization of incredible complexities was dramatized by Architect Sven Markelius in one of the UN council chamber ceilings.

Photos: (above) © Ezra Stoller; (left) George Skadding—Life

specialists, who may be in his own firm or commissioned by himself or by the client, and correlates their work. He is frequently guided by friendly contractors checking practicality of innovations and furnishing cost guesses.

Normally the job then goes to competitive bidding among a list of contractors invited by the architect. (On public work any bonded contractor can compete.) The architect then advises the client which bid seems most favorable. At this point contractors often change architects' specifications to the "or equals" they prefer.

On acceptance of a bid, the architect acts as the owner's agent: supervising construction at critical junctures to make sure specifications are being carried out, settling any disputes between client and contractor, certifying that work has been done justifying the client's payment of the contractor's bills, and finally signing a certificate of completion. On supervision, the professional detachment of the architect pays the client a high return. Sometimes the normal supervision services go further. Instead of inviting bids by general contractors the client may let the architect get bids from subcontractors only (those who do foundations only, masonry only, sheet metal work only, plumbing only, etc.) and then direct and correlate their efforts.

He has widely various talents

Within this framework of general practice there is room for the widest variations, in aim, method of work, degree of specialization and effectiveness.

There is room for the passionate god-hero Roarke of *The Fountainhead* and his conflict, as a creator, with the architect-organizer Keating cast as "villain." There is room for the forgotten architect serving Mr. Blandings, who built a home: this professional bumbler was neither especially creative nor well organized but was caught up in the disorganization of the building field.

The few truly "form-giving" architects of any generation are indeed mighty men inheriting timeless powers. They are so far ahead of the crowd in imagination, so much deeper in penetration, that they can operate only with and through exceptionally imaginative clients: a Wright has his Hibbard Johnson and Harold C. Price; a Mies his Dr. Henry T. Heald and his Greenwald. The relatively small amount of work done by some of the most brilliant men proves something about the nature of basic ideas: a powerful idea needs to be stated only once—or a very few times—to get born; the rest is a matter of mere multiplication.

Some of the trouble that can occur between the work-a-day client (the client who makes the world go around) and the architect he employs for practical purposes is the architect's secret knowledge that the only road to fame and immortality for him is to create the kind of a building that lifts people out of themselves through the appeal, let us say it squarely, of sheer beauty. It is this for which all mankind is secretly hungry. No other kind of architect stays in memory. As one looks back over history, old Architect Daniel Burnham, Chicago's great organizer, the man who virtually invented the "plan factory" employing hundreds of men, has been all but forgotten where Sullivan is remembered—frustrated Sullivan who wove magic around only a dozen sturdy frames. Able to achieve it or not, this is what every architect worth the name will again and again make his try for, at some disturbance to practical values.

Like the engineer and the doctor, the architect provides a service dependent on the advancing front of science and technology. Unlike anybody else who qualifies for professional status by mastery of a great deal of specialized knowledge, the architect is charged with responsibility for creating that perilous thing—a work of art.

Because architecture is mankind's one great attempt to create spiritual qualities in suffusion through a prac-



D. Kessel—Life

Architecture hung on the bridge: Pont Alexandre III, Paris, 1900. Architecture built in the bridge: Jersey Turnpike marching across the Hackensack Meadows, with Roland Wank's architecture integral as the engineering.

tical implement, every form-giving genius has actually a dual role in society. One is instant satisfaction to our hunger for drama against the sky: we may say that his building is "stunning." The other is the creation of prototypes. Thus Frank Lloyd Wright is on the one side an architect who has infused modern living with a Persian richness but on the other side the man who started modern design on its modular basis. He could even be smilingly described as the architect who caught onto the power saw. In his formative years, building was still only protoindustrial. Not yet fully industrial in his vision, he early took advantage of portable power tools and showed how to shape buildings using them.

Mies van der Rohe is on the one side an architect who shows perfection through selection, in a very different kind of indescribable beauty; but on the other side he is the man forever asking "how do we build?" He is the man who has shaped steel and concrete beams into a fluent "language," as fluent as our ancestors made the wood stud in their standard house-frames, so there remains no excuse for showing forth our steel age with anything but grace. And so one could go on, with the other "form-givers," as indeed Eero Saarinen once did (AF, July '53).

The dual performance, therefore, of the genius architect is to thrill us and show us a way. But in view of the vast horizontal spread of our society, its need to do *much* and not only do little well, it is here that the job of multiplication is taken over—by the organizer.

He has three means of multiplication

An architectural firm of the type of Skidmore, Owings & Merrill, or Voorhees, Walker, Smith & Smith, or Welton Becket, or Pereira & Luckman, is so large and ramifying as to deserve a separate chapter. Suffice it to say now that such firms do not usually originate basic architectural style ideas, except as changes in quantity can now become changes in quality.

Organized firms may be smaller and still be effective multipliers—through specialization. There are expert firms known as school architects, hospital architects, industrial architects, office building architects and architects for public buildings. Indeed, even though an architural firm likes always to keep itself rounded—partly so it can bring into one field lessons learned in another field of building—*within* the firm all men doing active production will likely be specialists.

Specialization reaches the point where it boils over into creation. For example, five years ago the profession was forcibly awakened (it happened to occur through this magazine) to the fact that four fifths of America's new homes were being produced without genuine architectural services. Most architects were simply morally horrified but a small group went into effective action—they had indeed already quietly begun to do so. They learned how to work with those effective multipliers of homes—the homebuilders—learned an entirely new method of design (design for a market), of contractual arrangements (royalties in place of fees), of operating methods and of cost accounting. Some went further. Charles Goodman, in particular, and Robert Anshen, finding few builders ready for the architect's more comprehensive viewpoint on quality and humane living, trained up a new crop of builders out of people from the cloak and suit business ready to take a flyer in a new field with their capital. In effect, these architects created their clients too.

Architects in various other fields of consultation have found devices for multiplication of their effectiveness. So a team composed of Clarence Stein, the late Henry



Eliot Elisofon

Wright, Albert Mayer, Julian Whittlesey, and their ally as a publicist, Lewis Mumford, became the creators of a new kind of town by learning the treacherous and manifold technique of modern architectural town planning. Dependent at first wholly on great humanitarian clients such as Alexander Bing, they went on to businessmen such as R. E. Powell of Aluminum Co. of Canada, guiding towns like famous Kitimat (AF, July, Aug., and Oct. '54). Others have found other fulcrum points. Thus Kenneth Welch, mastering every detail of merchandising in his connection with a store equipment company, found ultimately that he was in a great area of planning in the creation of huge shopping centers. Victor Gruen, entering this field, has added the dimension of community planning. The Rosenfields are but one among several architects or architectural firms that became hospital consultants multiplying themselves by working with large numbers of other architects, in association or consultation. Naming these few is merely neglecting many others.

Another field neglected in literature is that of the architect acting as an enlightened official. So Edmund Bacon, planning director of Philadelphia, has multiplied his effectiveness far beyond the range possible to one engaged in direct practice. Dean Sert of Harvard has sighed, "How I wish our architectural graduates would forget planning little houses one by one, just because they can 'control' the entire process, and get themselves over into the vast field of planning and rebuilding our cities." Others doing yeoman work direct school building programs; seldom do they gain the rich and deserved recognition that went to officials like the late Marshall Shaffer for whose work in the Public Health Service literally millions of sufferers in hospitals may be supremely grateful.

He has three rivals

The way today's architect may serve is further illuminated by his relationships with his fellow-members of the building team and his conflicts with his rivals. As Wallace Harrison used to say, "Architecture today is produced by men sitting around a table, and the man who makes the most intelligent suggestion is in point of fact the architect, whether or not that is his title." He referred to clients, realty men, rental agents, consultants of various kinds and engineers.

Of these people the engineer in particular appears sometimes as the architect's ally, sometimes as his rival. In general clients have looked first for an engineer where structures were large and complicated and technical. Forgotten are the days, as recent as 100 years ago, when John Roebling the engineer, was also the manufacturer of his own wire rope, the contractor in charge of labor, *and* a graduate architect. It must be conceded that the modern architect did not "invent" modern architecture. The engineers did. As Frank Lloyd Wright and others have pointed out, the significant way in which modern building differs from every preceding building form is that it makes use of steel and other high-strength materials in *tension,* rather than in compression. This single advance permitted the open, flexible, modulated building forms that modern architects have used with superb drama. It would have been ridiculous to consider structure in tension the sole province of the engineer. And it is becoming clear that it is equally ridiculous to eliminate architectural thinking from many other supposed domains of engineering, such as large civil engineering works. For example, as highway engineers cut apart and destroy whole communities with routings that grow out of attention to grades and in-

terchanges, and as they cause the deaths of thousands of riders through straightways where any architect could have told them 20 years ago on esthetic grounds that people would go to sleep through muscular inactivity and sheer boredom, it becomes clear that humanistic aims related to community living patterns and the behavior of the whole man are badly needed. The one shining example in the US where architecture was deliberately allowed to reinfuse civil enginering was the early TVA project; but even without any of the New Dealish overtones of that enterprise, the idea is bound to grow as community living gets tighter with denser population.

Apart from civil engineers, the architect deals with a multiplication of architectural and mechanical engineers as the equipment of buildings has risen from a negligible factor (stoves and a little plumbing) to more than 40% of total construction cost in some cases. This happens with the growth not only of structural complications (on simple buildings the architect is trained as his own engineer) but environmental controls: heating, air conditioning, lighting, acoustics and traffic. Here the engineer becomes a rival not in aim—he has to subordinate himself to the architect's design for the building as a whole—but for a fair share of the building dollar. Where architects pay engineers out of their own total fee, either as members of an architect-engineering firm or as consultants, there is bound to arise a question of possible skimping, true or not. In two industry round tables of recent date a path to a solution was indicated: it was pointed out that the total percentage of building costs now assigned by clients to the service of planning and design as instruments of development has not grown beyond that 6% zone where it always stood, and this in spite of the vast complication caused by demands for exact and ramifying engineering. It becomes essential therefore for architects and engineers to bury their conflicts and join in convincing the building public that such scanty payment for a complicated job must lead to inadequate analysis, incomplete investigation, and shoddy work. The airplane industry, as reported by a top representative at one of these meetings, devotes not 6% but one third of the cost of its planes to planning, design and research.

He has learned from his rivals

Another rival appeared on the horizon in the twenties —the industrial designer persuading industries to simplify their production and enlarge their markets by "restyling" their products. In the field of building such firms have now penetrated deepest in stores, display rooms and all sorts of interiors. Architects have been observing in a rueful mood that all actual design work on such jobs is done almost entirely by "captive" architects, but the income goes to the industrial designer as front man, mainly because of the uninhibited code under which he sells his services. The largest architectural firms have been quick to copy some of his apparatus—the model in place of the old-fashioned rendering, the 3-D projection, the slick chart, the streamlined exposition, the unabashed appeal to marketing impulses. Social philosophers have, meanwhile, observed that the easy direct tie through "consumer studies" to "market preferences," convincing as it may be to building buyers, loses sight of an ancient prerogative of the creative man, as exemplified by the architect. His taste is *better* than the market, because his perception is more trained, his knowledge of contexts is broader, and his senses are more sensitive. Thorny and bumpy as his disposition might sometimes be, the country would lose immensely in losing his individual leadership.

Yet another rival plagues the architect—the package dealer. This is the builder who offers the planning and design of the structure for free as an inducement in delivering a complete "package" of service, which involves in a single operation the design and building of the structure and assistance on its financing. Like the industrial designer, the package dealer operates not without architects but with "captive architects" working on salary under his orders. The argument of the "package" firm is based on the convenience and savings to the buyer of a single correlated operation. He may also offer concentrated experience in a single field such as industrial plants. He says that his designing is done with knowledge of the exact materials market of the moment because he buys his own materials, and even stocks some standard items such as standardized steel beams. The official rejoinder of the organized architects in the American Institute of Architects is that the client who accepts the easy way of "leaving it all to Joe" loses important controls over the job: the independent professional architect's choice of materials on quality alone and not in relation to stocks on hand, the value of competitive bids from contractors, the value of the architect's professional supervision of construction to keep it up to standard, in short the architect's services as the client's representative.

Independent observation might discount a little the heated arguments on either side. The large "package firms" are in fact thoroughly responsible and, competing with one another and with independent contractors, do generally a reliable job. Actually behind the scenes, one finds a great deal of cross-dealing among the few large architectural firms specializing in the industrial field, the few large contractors, the few large package firms. Thus the "package firm" may actually bid and build an independent architect's design, or the independent architect may design for the package firm on occasion and according to convenience. As it happens in war, so

it happens in business, that deadlocked enemies can gradually come to resemble one another as they copy one another's most effective weapons.

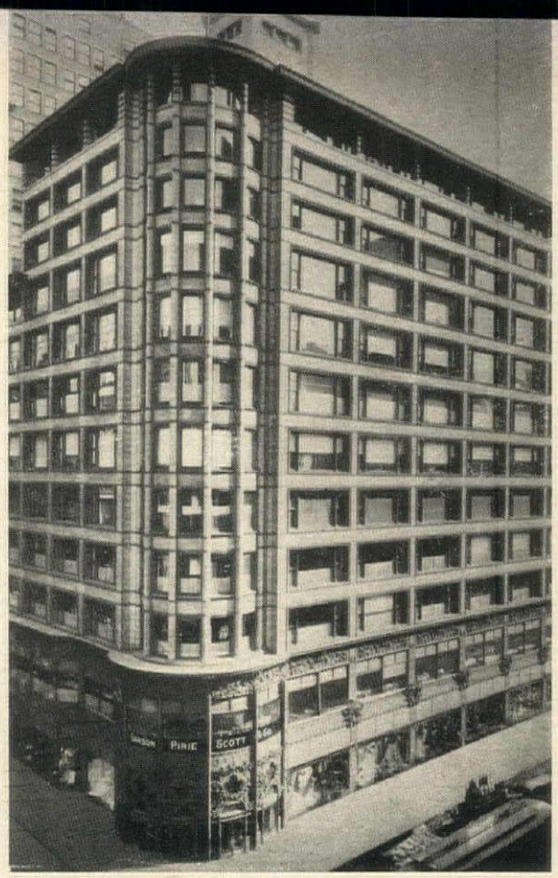
Most strongly in the independent architect's favor is his ancient advantage of humanized completeness and roundness of view, felt most strongly where plans depend on psychological acumen, or benefit from fresh views brought in out of acquaintance with other kinds of building; some architect Davids have also overcome an overconfident Goliath with closer analysis and lower costs. Yet some few others have followed the argument of Teacher Walter Gropius (AF, May '52) and themselves headed their own "package firms" as master builders. They agree with Gropius that only so can they seem really integral in the building effort, only so can their planning costs get paid without question, only so can they seem businesslike in a country that highly respects—and pays—men of business.

He carries an ancient moral commission

At his best the architect is the man in pursuit of wholeness in the building concept and in the building effect.

Religious literature testifies to this wholeness in architectural creation by referring to the universal creator as "the architect of the universe." As a man of art, the architect, long, long before Ictinus of Athens, was one who permitted his fellow man to wrap himself in the sublime and "forget his troubles." As a moralist, the architect, ever since Ruskin and more especially since Viollet-le-Duc of the nineteenth century, has been a man of weighty conscience to whom the way of combining two sticks, whether of wood or of steel, involves deep problems of rectitude. In the domain of philosophy, Paul Valéry's remarkable essay, *Eupalinos ou L'Architecte*, has the shade of Socrates express the desire to return to earth as architect and not as philosopher, because the two are reverse sides of the same medal. The philosopher's business is to challenge certitudes with great doubts; whereas the architect has no choice but to meet doubts with the certitude of great actions. And again, social responsibility has made one large group of architects positive sociologists, brothers to the doctors in promoting social health through improvement of the man-made habitat. Planners like Clarence Stein and teachers like prominent William Wurster are living examples.

To be sure not all the 22,000 registered practitioners are filled with all these virtues, but among architects one finds some very wonderful people. They need to grow decisively in numbers, to win allies on the building team, and to grow into a spirit which does not consider architects employed by others as "captive architects" but as possible captors of the nation, and all that men build in it, for the great cause of architecture.



Sheer size complicates the intricate mesh of today's corporate clients, specialist experts, technicians, consultants. Architect Louis Sullivan's Carson-Pirie-Scott building was a very large job for 1904. A very large job for our time: Rockefeller Center.



Thomas Airviews

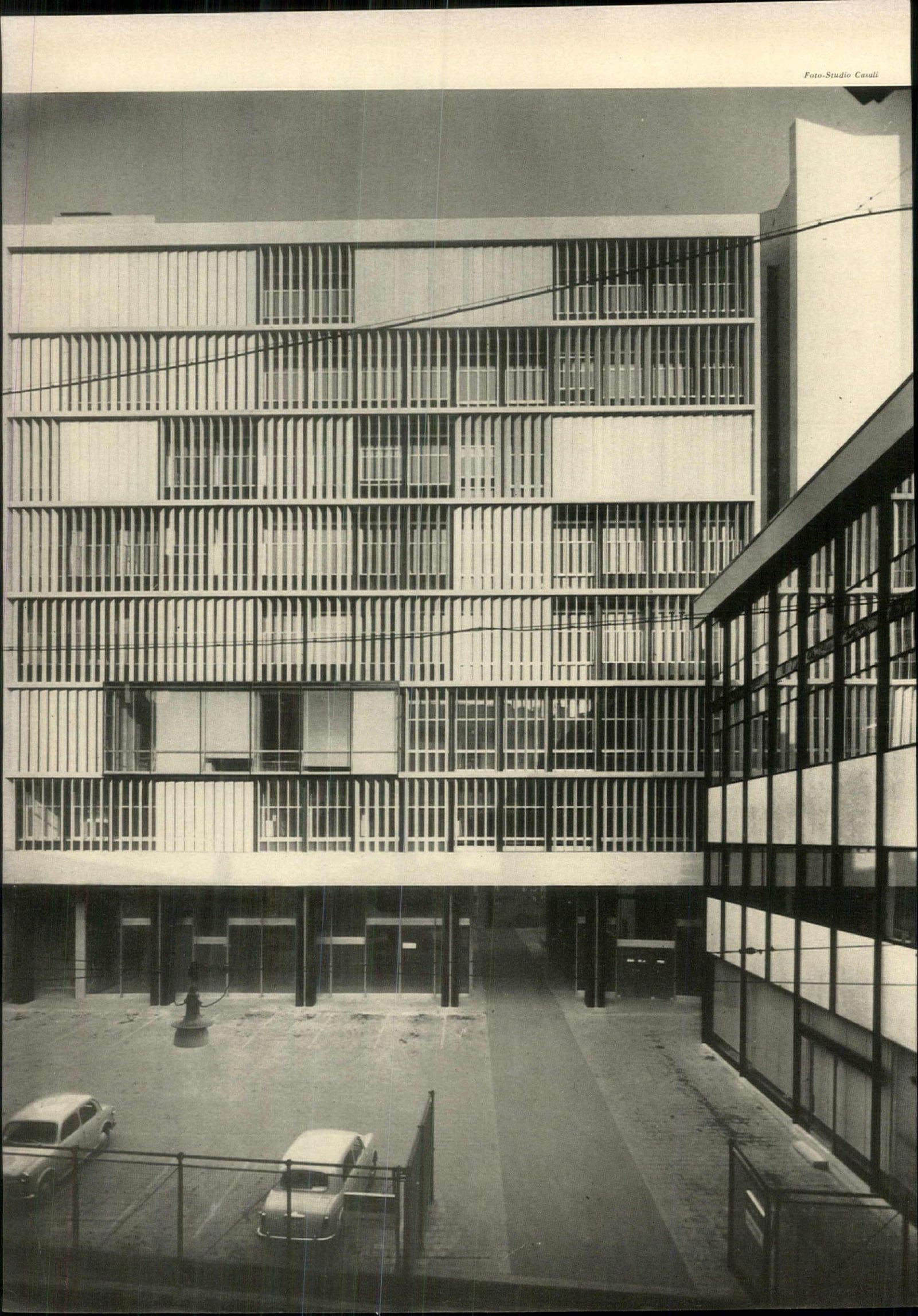


Foto-Studio Casali

PALAZZO OLIVETTI—Milano
ARCHITECTS: G. A. Bernasconi
A. Fiocchi
Prof. Marcello Nizzoli

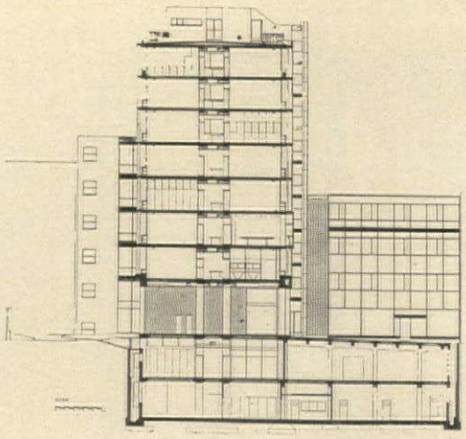
BUILDING ABROAD

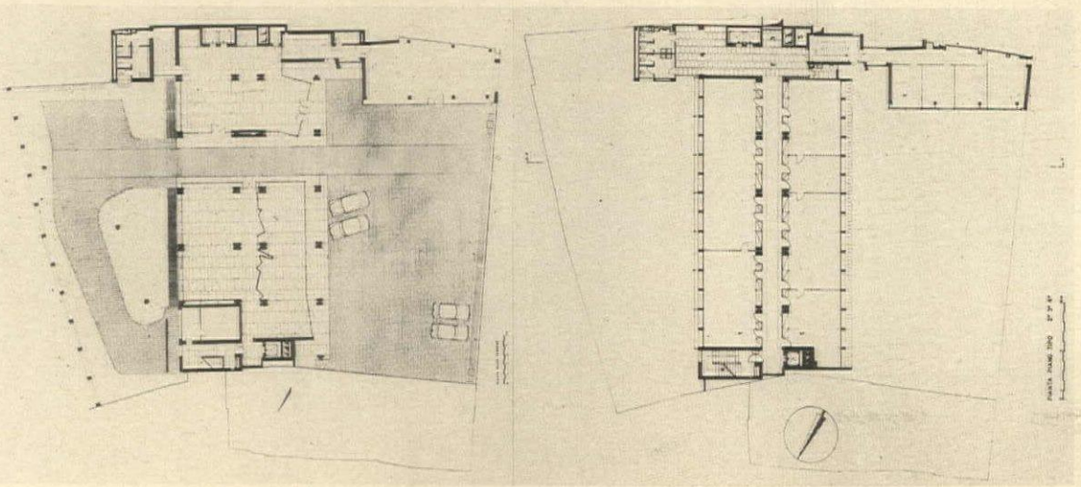
PRECISE HEADQUARTERS FOR A MANUFACTURER

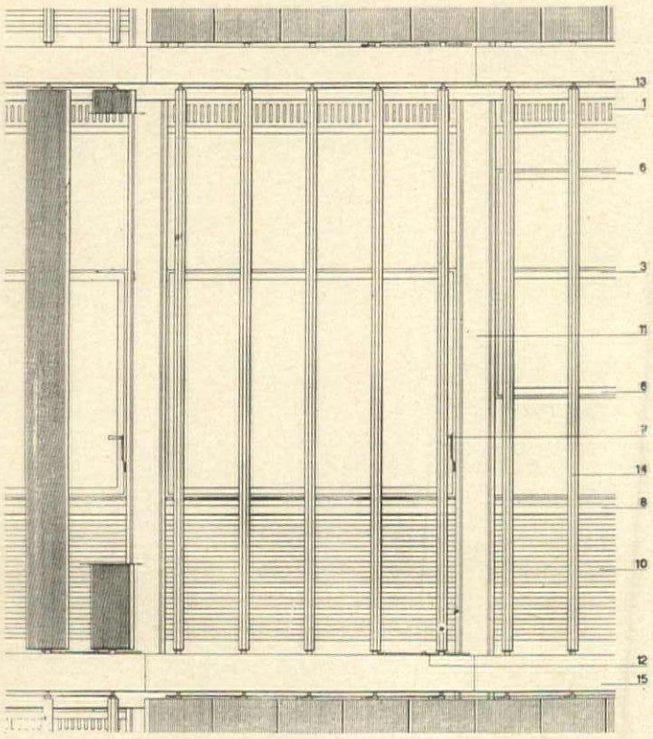
Main facade (left) wears sun guard of adjustable aluminum louvers, is set back from narrow street, with lower wing projecting forward (see section and plans below). A basement garage for 40 cars is reached by ramp through garden.

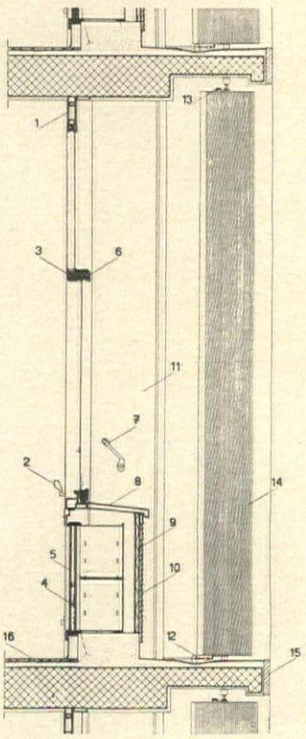
Olivetti, an alert Italian manufacturer of business machines, is represented in the US by several outstanding showrooms of distinctly differing characters, from the richly complicated Fifth Ave. installation (AF, Aug. '54) to the bright, simple shop in San Francisco (AF, Sept. '54). For their new headquarters in Milan, they chose the second of these two techniques, simplicity, but built with rich materials—glass, aluminum, marble and ceramic mosaics, a highly compatible combination after all. They also put in an advanced air-conditioning system and a wall of adjustable vertical louvers to ease the afternoon sun load in summertime.

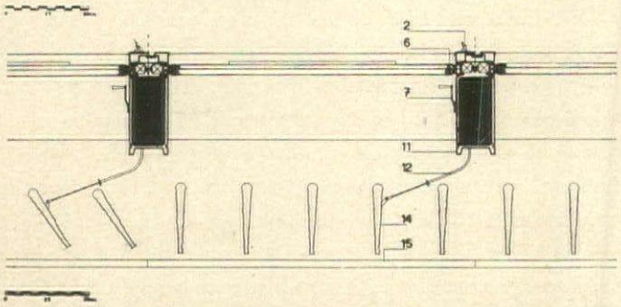
The new headquarters is an eight-story block with a four-story annex. The user of the Olivetti equipment, or the potential user, can look at this graceful, exact building and get a good general reading on the accuracy with which this company's product will perform. The ground floor, completely glazed, is a somewhat more specific showroom for the typewriters and other Olivetti products, displayed against a background of the garden behind the structure. When completed the building will have an H plan, with another lower wing projecting forward toward the street.





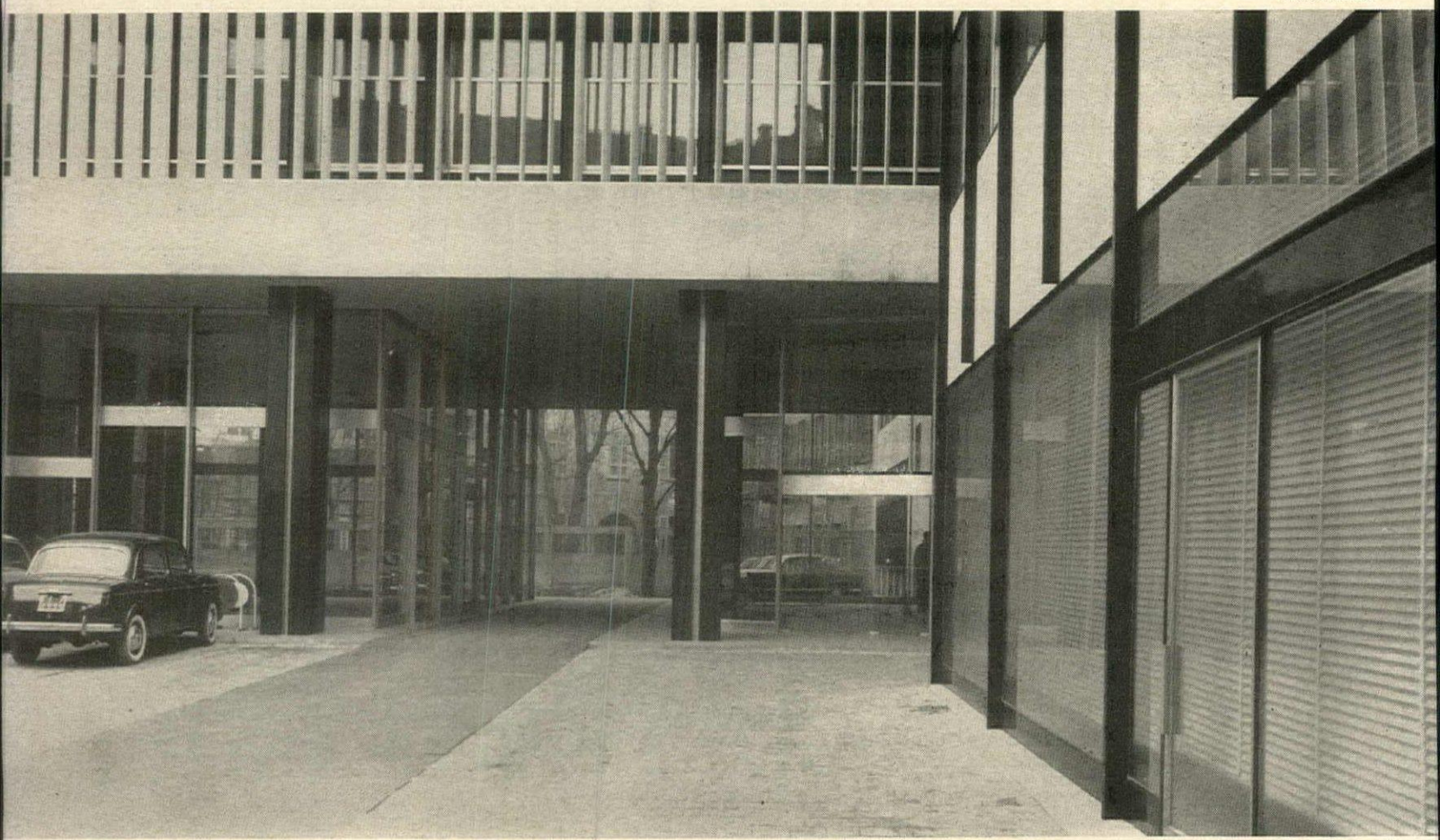






Aluminum louvers of southwest façade are operable from inside building in groups of ten (note diversity of pitch in photo). Façade gets sun almost all day long. It is set back from street so that it may be easily viewed by passers-by. You come upon building suddenly, its main bulk rising beyond gentle upslope of paved piazza—a calculated approach which makes most pedestrians stop, and look, and ask whose building it is.

Photos: Casali





Low office wing by side of piazza. Except for lower floor of main building, left, and double basement, entire structure is offices. Piazza paving is underlaid with network of pipes through which heated antifreeze is circulated in winter to melt snow.

North-east facade of main building mass, seen from garden. Frame of building is reinforced concrete with walls hung from projecting slabs. Structural columns are clad with black and white anodized aluminum, fascias with Botticino marble, other external wall surfaces with white ceramic mosaic. Structural frame is designed to receive additional top deck for helicopter landings.

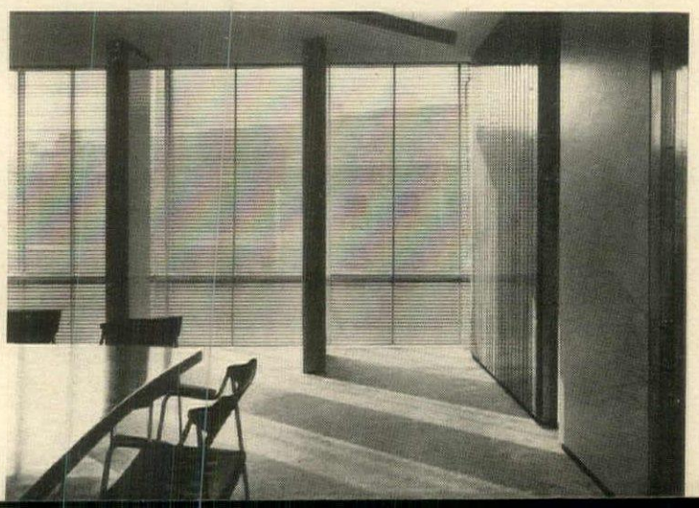


Exhibition space on first floor is flooded with light from egg-crate ceiling. Columns are sheathed in black and white anodized aluminum.

Photos: Casali



Interior partitioning, all demountable, is made of aluminum sheets, connected to each other and to ceiling with rubber joints, under pressure. These partitions are of three types: opaque panel, glass panel in center; glass panel near ceiling. Special study was made of acoustical problems. Decibel losses were figured at standard room noise level of 70 db., for three partition types are, respectively, 18 db. absorption, 20 db. and 18 db.



Board room. Its window wall is only section of southwest façade which does not wear vertical louvers, relying instead on Venetian blinds (see exterior façade photo, p. 124).



Roger Sturtevant

SCHOOLS: a look backward and forward

Every 15 minutes enough babies are born to fill another classroom and we are already 250,000 classrooms behind.

Statements like this have become monotonous with years of repetition. Back when the first crop of postwar babies came along, the foresighted cried that, unless we did a herculean job, by 1955 more than a million children would be on shift sessions or going to class in basements and firehouses. Here we are, and more than a million children are on shift sessions or going to class in basements and firehouses. In 1955 not just the foresighted, but almost everyone who can read, hear, or see, at last knows we have a fabulous problem solvable only by extraordinary means.

We might call these last ten years the Years of Arousal. Let us hope the next ten will be Years of Action. In the meantime, this seems to be the Year of Assessment.

On Nov. 28, delegates to the White House Conference on education will begin a national assessment of the problem. The conference preparations —and the predicament—have already stimulated thousands of school district, county, and state assessments. Alongside the assessments of what we want in education, how many schools and teachers we need, how we are going to get them and how get the money to pay for them, an assessment of *what kind of schools* is very pertinent. Thus the following 26 pages are devoted to an appraising look at where we stand in the art of school design.

The assessment begins overleaf with a revisit to the most influential school of modern times, Crow Island in Winnetka, Ill. Crow Island of 1940 marks the dividing line between the old-time elementary schools and the new. It still looks so good and works so splendidly, it is discouraging to the idea that each year's designs are better than the preceding. But it is encouraging proof that modern schools can be executed so competently and conceived so solidly.

Hillsborough (p. 138) is another mature and accomplished performance. It is the culminating school, the most refined example to date of the leading plan type of the forties: the finger plan and its adaptations.

Bartlesville (p. 143) represents the emergence of what promises to be the dominant scheme in the fifties: the quadruplex cluster.

In high schools, the two dominant types at present are represented by North Allegheny (p. 150), a very creditable example of the conventional, massive school, and Northport (p. 151), a campus plan calculated for the uncertainties of future pedagogical policy.

We have never had a Crow Island in the high school field. But, a new kind of high school (p. 146) is in the making with the giant surge of adolescent population hot on its heels. This juxtaposition of concept and need has its providential side, but its unfortunate side, too. Who will have time to give to a high school prototype the patient, loving study that went into Crow Island?

There will be little time or money ahead for patiently polished gems. But there is a wide, wide range between gem and junk. It is vital that the schools built in the coming Years of Action do not shrill to our shame that they were thrown up in a panic.



Gordon Coster

CROW ISLAND REVISITED

The Winnetka schoolhouse that revolutionized the elementary school still has a fundamental lesson to teach

Back in 1940, Crow Island was an astonishing building. Architects Eliel and Eero Saarinen and Perkins, Wheeler & Will, working with a highly creative school administration, designed this building almost as if no school had ever been designed before. For the first time, modern elementary education—incubated in plants a colonial schoolmaster could have understood perfectly—got a house to fit it.

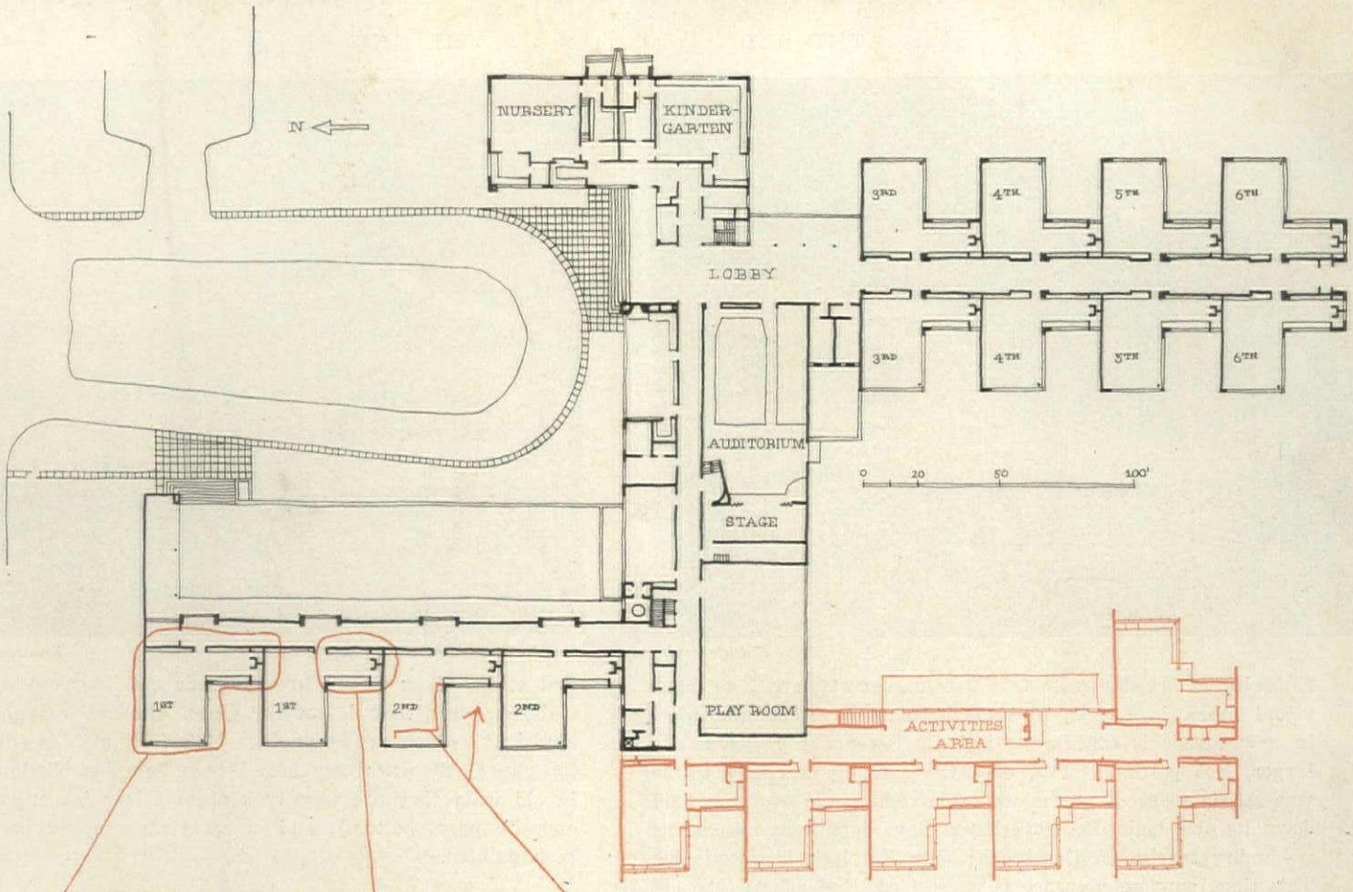
In 1955 Crow Island appears, if anything, more significant than it did 15 years ago. Time and use—not only here but in many hundred later schools—have proved out the workability of its innovations to a degree that only the wildest optimism in 1940 could have conjectured. The national debt owed Crow Island for ideas large and small is staggering.

But the most exciting thing about Crow Island in 1955 is the lessons it still can teach. Mainly these are lessons in atmosphere, compounded partly of scale, partly of materials, partly of detailing, infused with a loving, patient perfection, inspirited by the civilized, humanizing values of calmness and warmth.

We have become so used to schools skimped on calmness and warmth that most of us hardly notice the omission any longer—until we see something like Crow Island. Then the extent of our deprivation hits home.

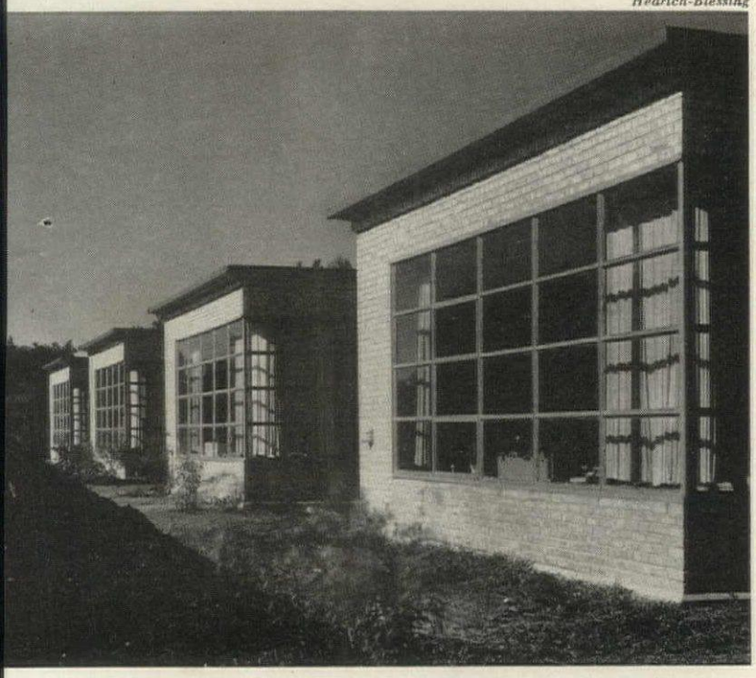
Crow Island has a new classroom wing, just completed, by two of the original architects, Lawrence Perkins and Philip Will. Basically the new classrooms are the same as the old, so well has the architects' original work stood up. Where there are differences, the new are sometimes an improvement. But in other ways—mainly where the architects have accepted current dogma—the new wing is not so good. Perhaps the designers and administration should have called a private halt to evolution and looked more penetratingly at their original.

And because such a look will profit anyone concerned with schools right now, this revisit will be no trip down memory lane, no well-deserved tribute to what Crow Island and its planners have already taught us. It will be concerned with what Crow Island has still to teach.

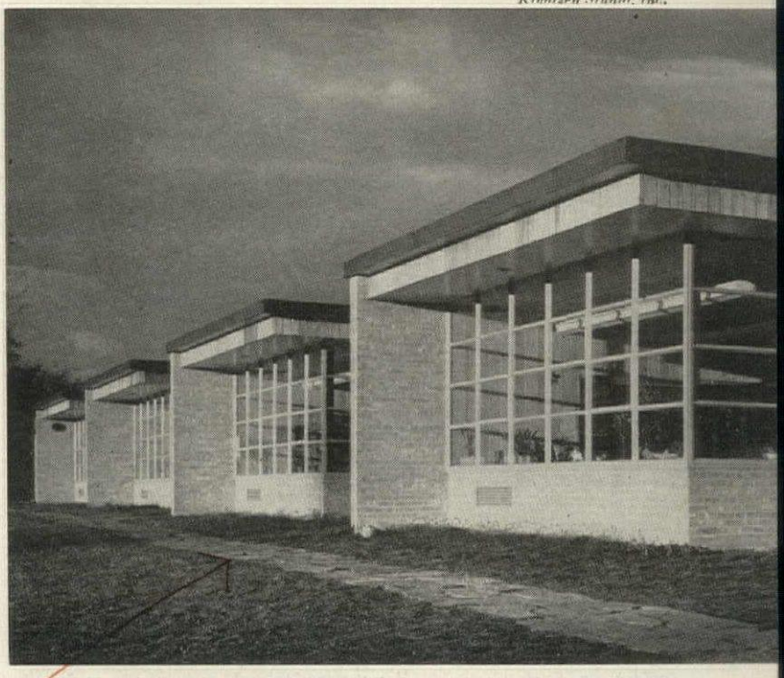


L-shaped classrooms are organized to give each room its own outdoor yard, and with greatest visual clarity make the point that classrooms are self-contained. Both L shape and organization of the L's have worked splendidly and were repeated in the new wing not out of sentiment but because teachers, pupils, administration felt this basic room with work space, corner window seat, associated yard, could not be improved upon. Incidentally, this is believed to be the first school organized with a "community center" at the core and classroom wings, instead of classroom center and dispersed activities. It was also first to zone by age groups. Almost every school scheme since, including campus plans, shows influence.

Hedrich-Blessing

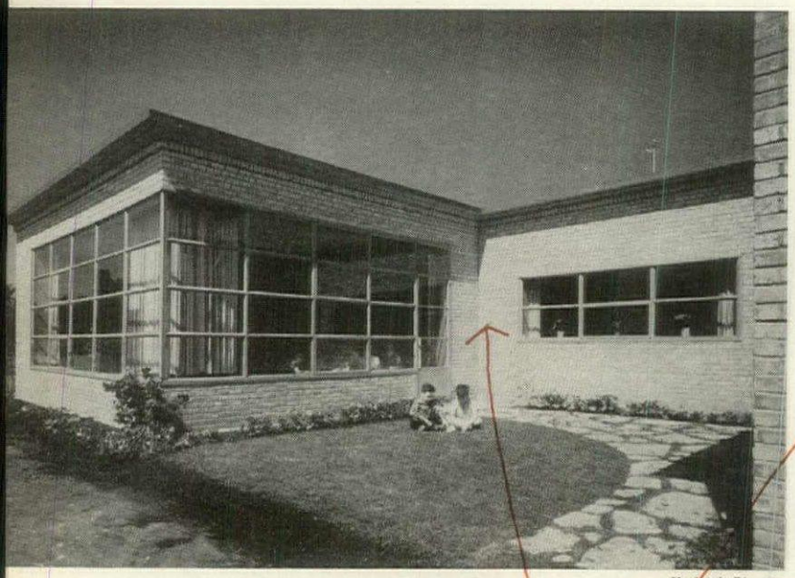


Krantzen Studio, Inc.



Old wing made its point consistently: Here stand little houses, each a place in its own right, each among its neighbors. New exterior makes a new point: Here is an institution separated into blocks. A difference in emphasis becomes a difference in kind. This emphasis on the over-all institution is very characteristic of our times (in spite of all our talk about "domesticity" and the individual), possibly because of our current liking for long horizontals. Is it a good characteristic? The repose of the earlier wing against the tension of the second is another accurate reflection of school (and architectural) evolution since the first Crow Island. And is this good in schools? Looking more closely for the source of the difference we come at once to the overhang which imposes its unifying institutionalizing line. And if there is anything that strikes us as "old-fashioned" about the old wing, it is lack of architectural devices for sun or sky glare control. More of this subject overleaf.

THE OLD



Hedrich-Blessing

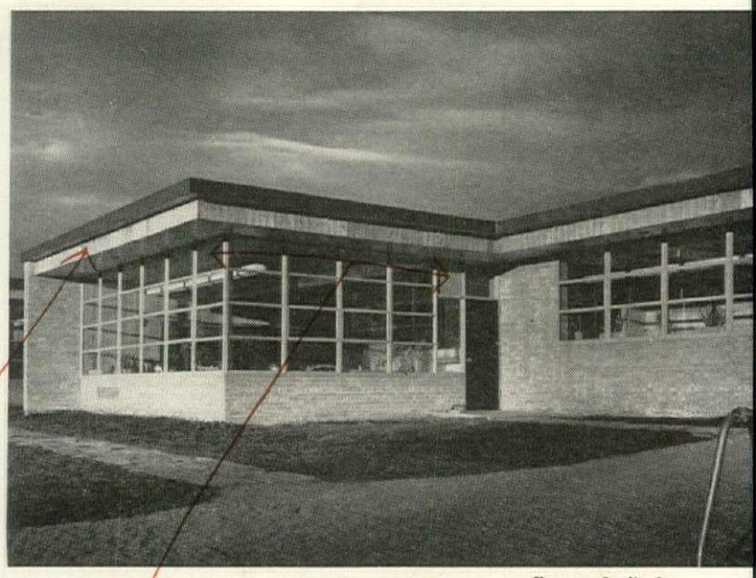
Exterior of old classroom unit used corner at work L to mark visual break in façade, give child-size scale. Dominant effect in new façade is continuity; it looks lower but paradoxically larger, less personal. For, once the running overhang theme was set, in place of precast concrete coping, the overhang laid down its own logic. Roof overhangs have become as natural as swimming trunks on the beach; only the lack is questioned. This time, suppose presence is questioned. End effect: The old classroom windows required draperies or blinds. The new windows require draperies or blinds. (They have been equipped with bamboo horizontal blinds which teachers say are too all-or-nothing compared with Venetian blinds.) Windows face west



Hedrich-Blessing

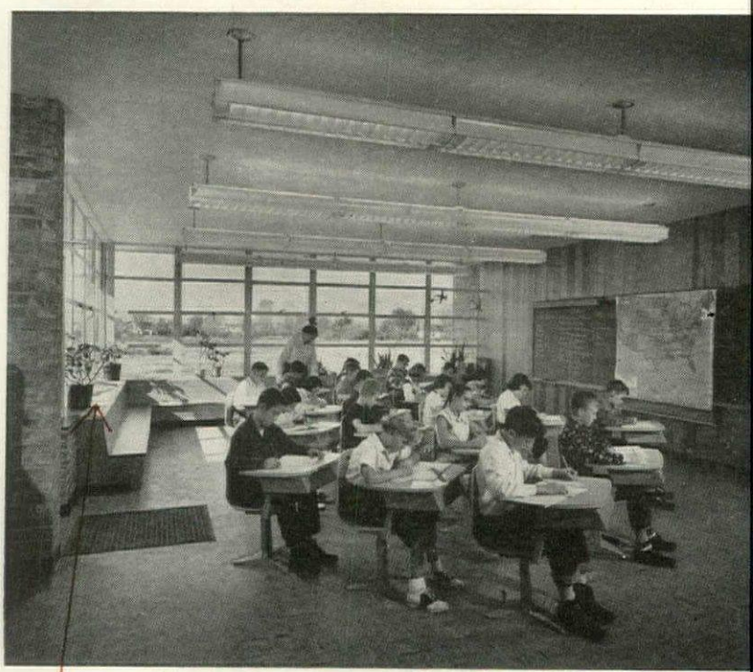
Classrooms, especially lighting, show subtle change in "functionalism." Old school put more value on subjective psychological effect as factor in function; new school puts more value on physical criteria, outcome of vast amount of research in equipment industries. Both rooms take total environment well into account and difference is matter of degree. Recessed lighting was good because light creamy asphalt tile reflected back. But inner corner is too dark (for solution see p. 134). Fluorescents give more uniform light but at great sacrifice to atmosphere. Custodian dislikes new fixtures as maintenance (dust-catching) problem. Heater-ventilator in ceiling saved space but mars

THE NEW



Kranzten Studio, Inc.

and south. Even though overhangs do not interrupt sun, especially on west, they do cut sky glare. Alternative suggested by hindsight (which can be another job's foresight) is eliminating top panes. Empirical support: Where Venetian blinds are used in old wing they are usually kept to this point anyway (see opposite page, bottom), and in some cases upper panes have been painted.



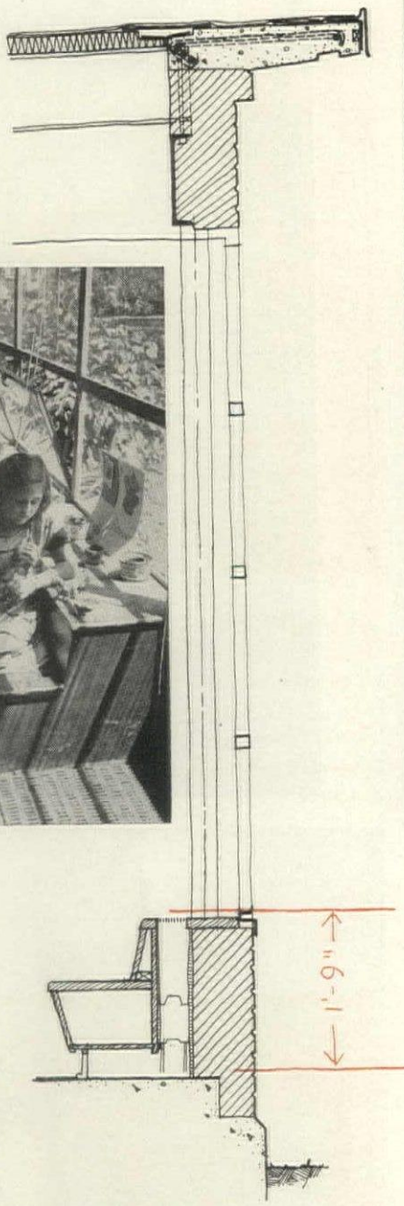
Kranzten Studio, Inc.

plaster near outlets and sends gusts over children. Window unit corrects these faults but robs seat of work and exhibit sill, sometimes sends gusts behind children. Except for minor heater-soil, acoustic plaster, like all materials and workmanship in building, has stood up well. High shelf tier was replaced with more useful rolling bookshelves designed by architects (not arrived when photo was taken).

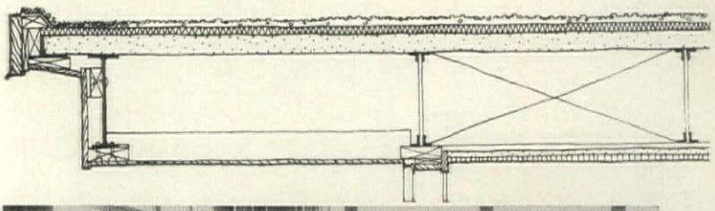
THE OLD



Gordon Coster

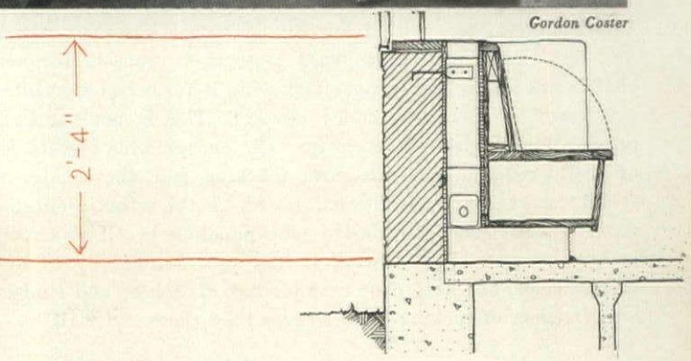


THE NEW





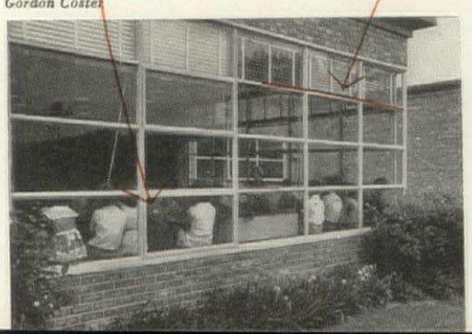
Gordon Coster

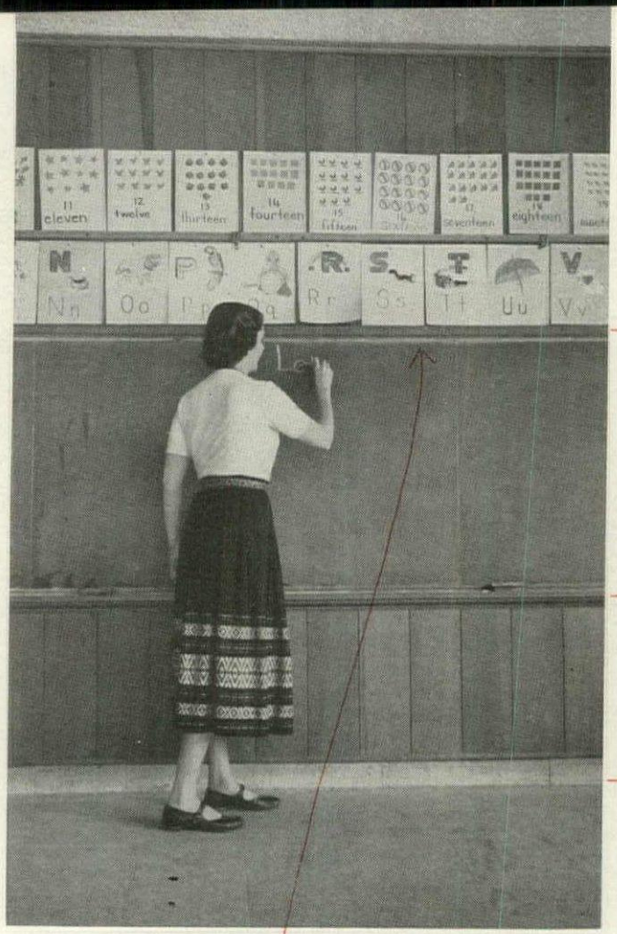


Corner window seat is one of school's finest classroom features, does wonders in imparting chummy, cooperative feeling to group. Teachers report they can hardly imagine teaching without it. New wing improves this good thing further, for older children, by making it comfortable height for them. In old wing, bigger children, hunting comfort, sat with feet on seat. Higher seat detracts somewhat from indoor-outdoor space-flow more emphasized in older wing. Architects were well aware of this, balanced one loss against another gain, and nobody has lamented (or possibly even noticed) the loss. What is lamented is loss, because of the continuous underwindow heating-ventilating unit, of wide window sill for terraria, informal exhibits and the like. The way such simple, casual amenities are beloved suggests school designers should pay more attention to creating, retaining and reconciling them with mechanical demands. Have we gone too far, in school practice, with allowing mechanical functioning not only to set the stage, but to hog it? After 15 years, humanism of older Crow Island classrooms has been equalled perhaps only in Perkins & Will's Heathcote school (AF, June '54). Certainly it is a rare (and lovely) thing.

Window view of classroom shows larger children's solution to too-low benches. Radiators behind bench are not continuous in old wing. Note point at which Venetian blinds are leveled.

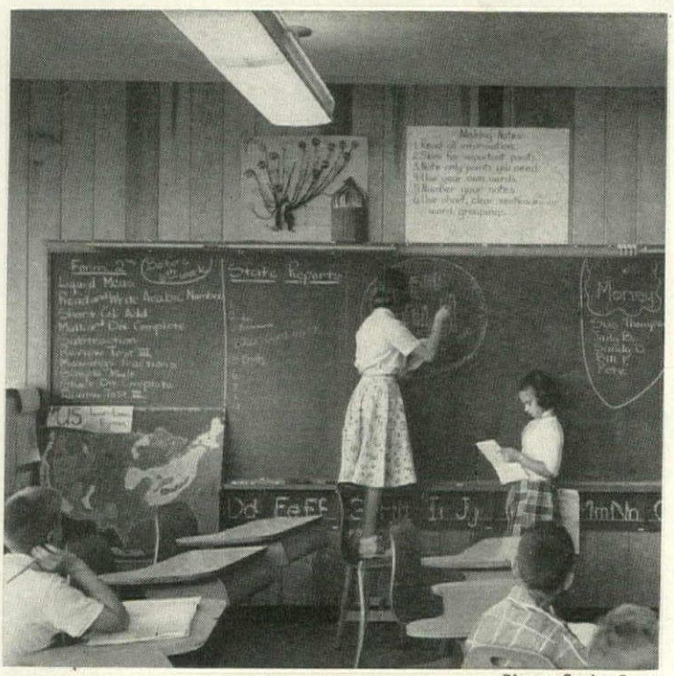
Gordon Coster





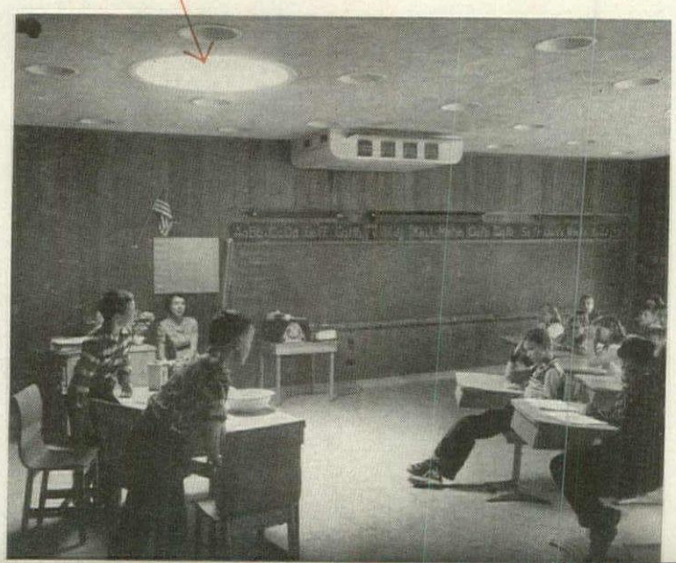


Chalkboards were scaled low in old wing (like door handles and light switches). In response to teacher requests for more chalkboard space, and because new wing is for oldest elementary age group, surface was added upward. This is not successful answer for children or even for tall teacher who regrets loss of easily reached tack space for teaching aids above, does not feel recompensed by additional board. Total esthetic effect of room is also loser. Tackboard pine paneling in all classrooms is huge success. In old wing it has aged beautifully to light walnut color, has needed no maintenance. Teachers and students love freedom of tacking up wherever they choose on wall.



Photos: Gordon Coster

Domed skylight of plastic, experimentally inserted in dark corner of old classroom, not only solves problem but makes excellent "spolight" for speaker or class skits. Pupils also love a chance just to sit under it.



THE OLD

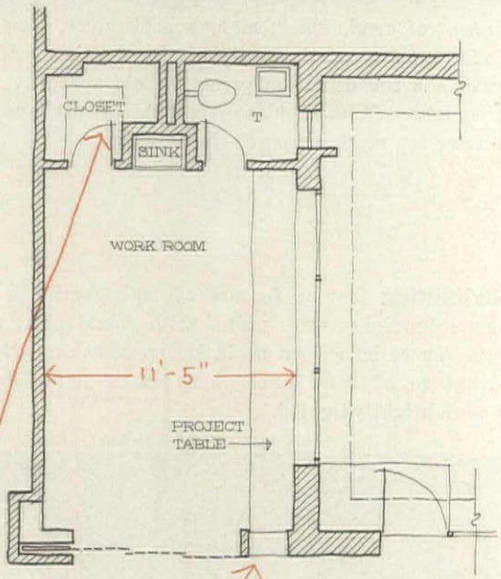


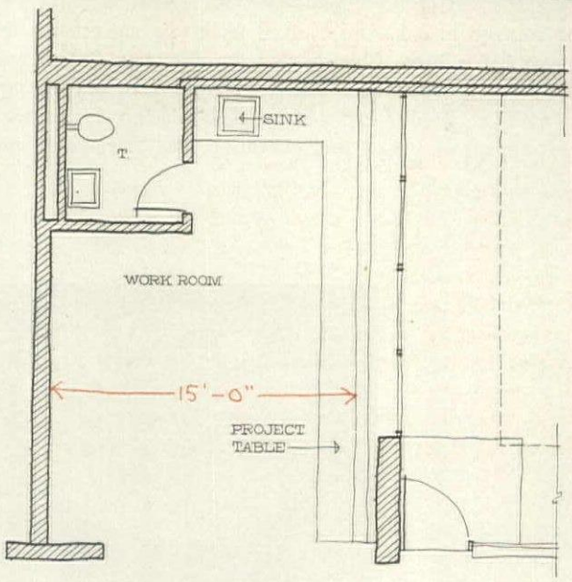
Hedrich-Blessing

THE NEW



Kranzten Studio, Inc.

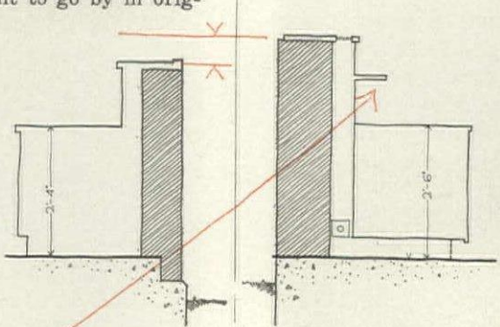


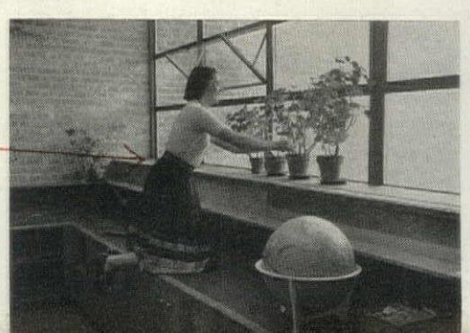


Gordon Coster



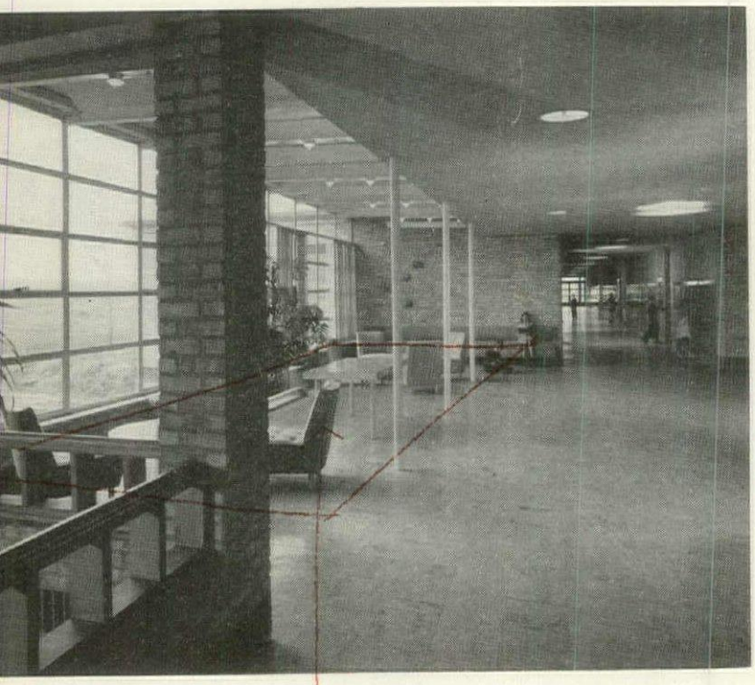
Work area in self-contained classrooms was among Crow Island's principal innovations, is still among nicest examples of class project space in existence. Putting sink and running water into classroom made it logical to add individual classroom toilets, another innovation. Without precedent to go by in original building, architects determined on one toilet, used by both sexes, like toilets in children's homes. As hedge against possible irrational prudery, second cubicle was built in, used for storage. One-toilet arrangement caused no protests so in new wing, storage closet was omitted, desirable counter and cabinet space added, and toilet door better placed. Another big improvement in new work corner is omission of token divider from classroom. Wider opening makes difference between comfortably usable space and bottleneck (old passage was not quite wide enough for work alongside traffic). New counters have linoleum tops in place of wood. Old wood tops have worn well and are still attractive but do show marks of work. Higher sill over counter permits useful new shelf but makes plants on sill hard to reach and tend, cuts outdoor view.

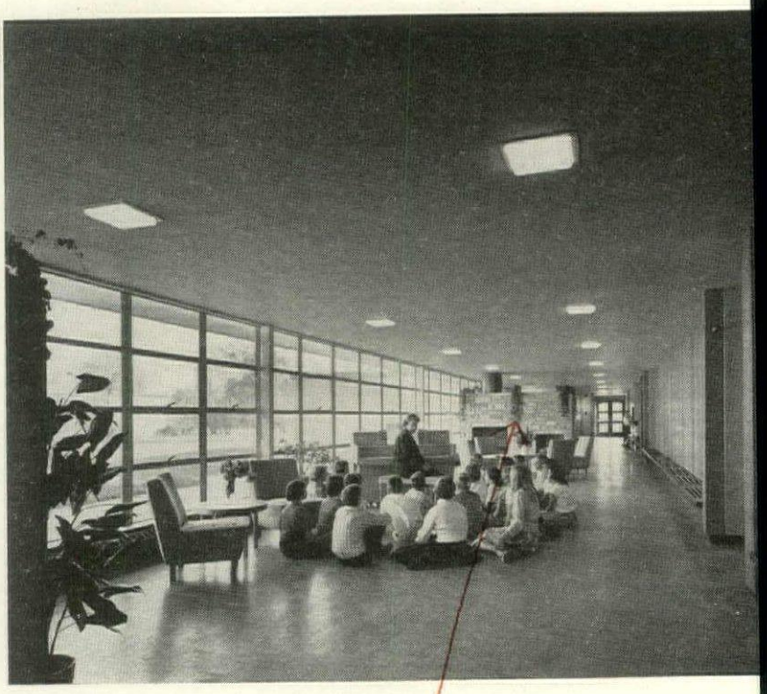




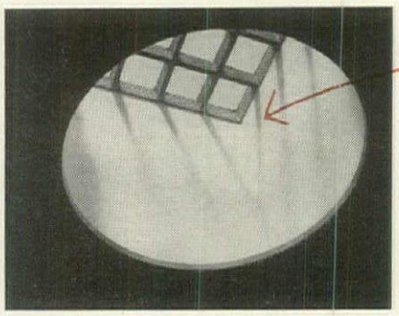
THE OLD

THE NEW





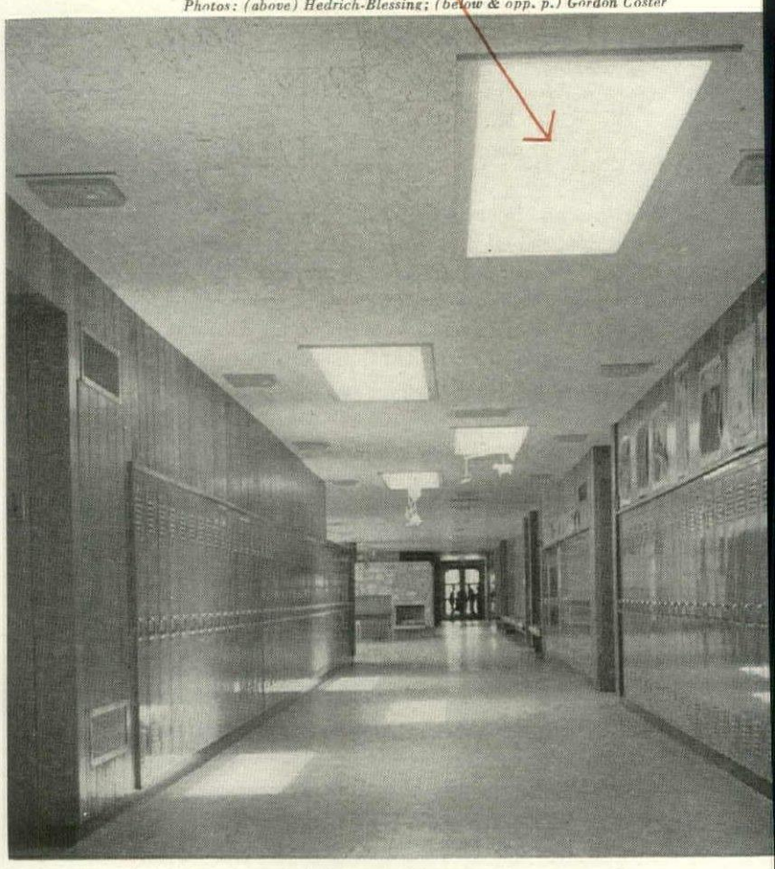
Corridor lounge in old wing evolved from original scheme for placing greenhouse here. Change was for economy. Greenhouse would undoubtedly have been handsome and fun, but change proved stroke of good fortune for school design in general. Lounge is immensely useful and charming, has been paid compliment of emulation in many schools since. New wing has two similar spaces partially divided by fireplace. Missing in new version is the definition given the old space by its slight hint of enclosure. With fireplace freestanding, perhaps the new space becomes too much a part of the corridor.

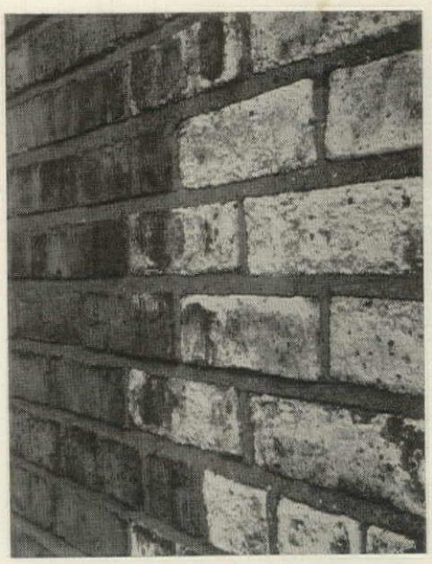


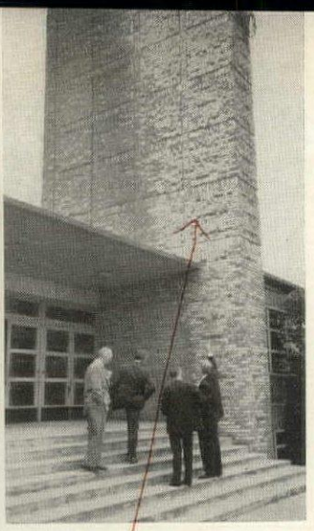
Skylighting is nice feature of both corridors. In old wing, square rooflights were united with round plaster ceiling openings. There have been no leaks, no streaking. New wing takes advantage of more economical plastic lights developed since, is more brightly lighted.

Photos: (above) Hedrich-Blessing; (below & opp. p.) Gordon Coster

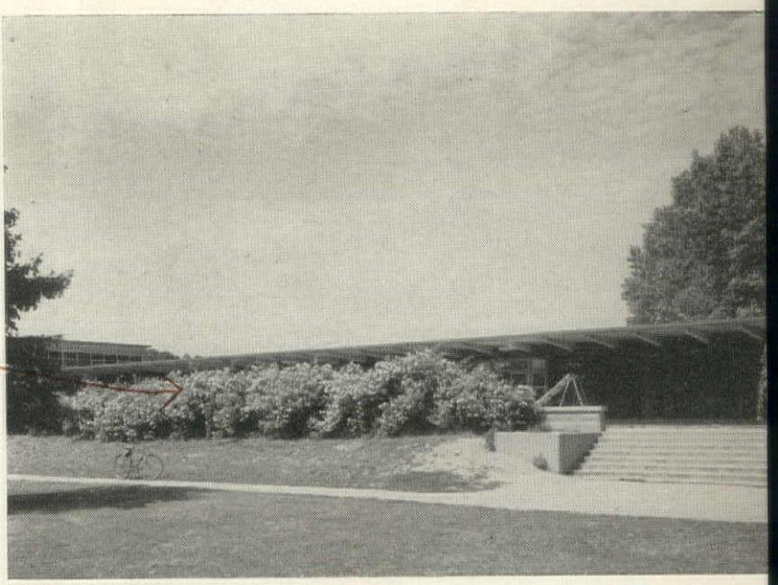


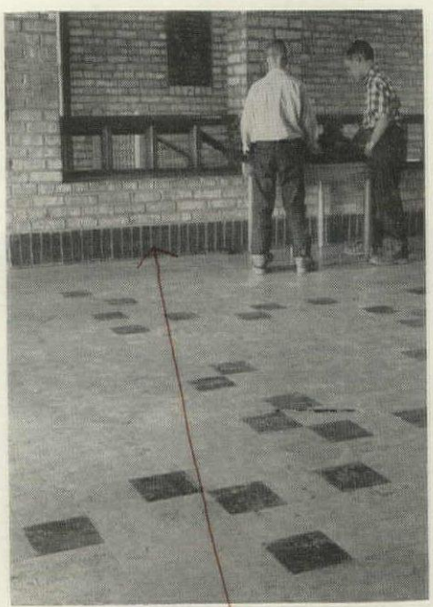




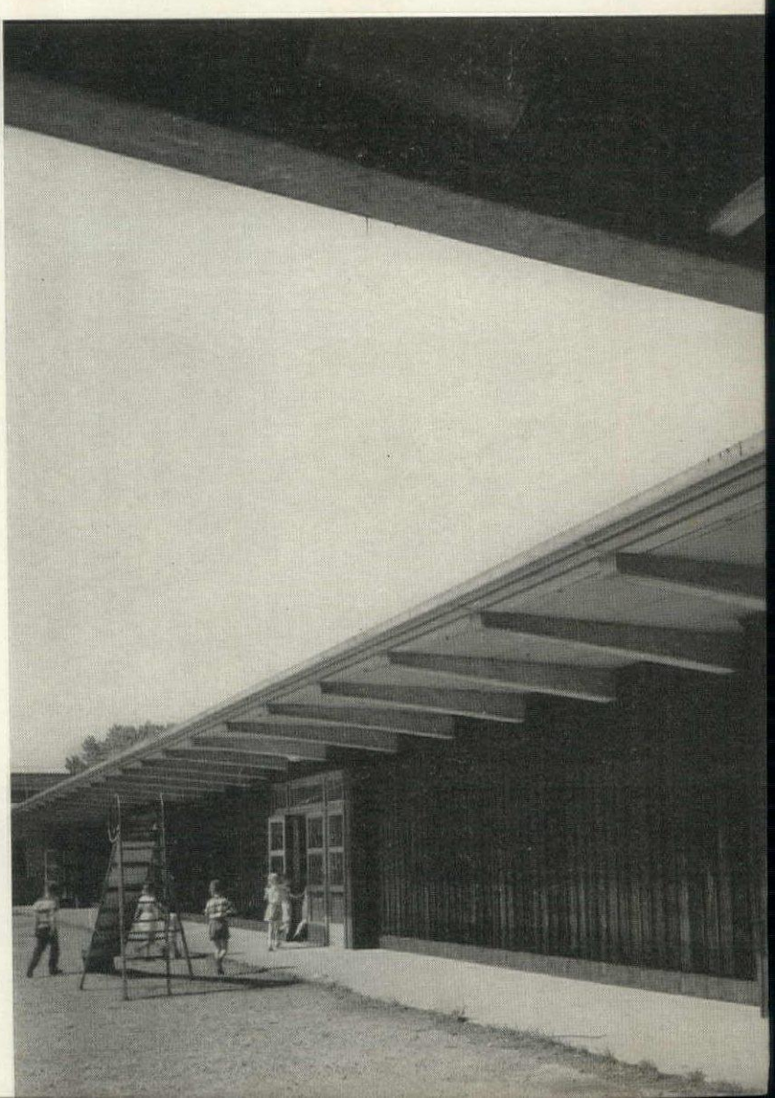


Brick is local product with pinkish cast and together with integrally colored buff mortar looks very handsome, has needed no pointing. Only two defects are observable in school's condition: 1) efflorescence has appeared on front portion of chimney-clocktower where it is neither sheltered by eaves nor warmed by flues, 2) hedges need a haircut.

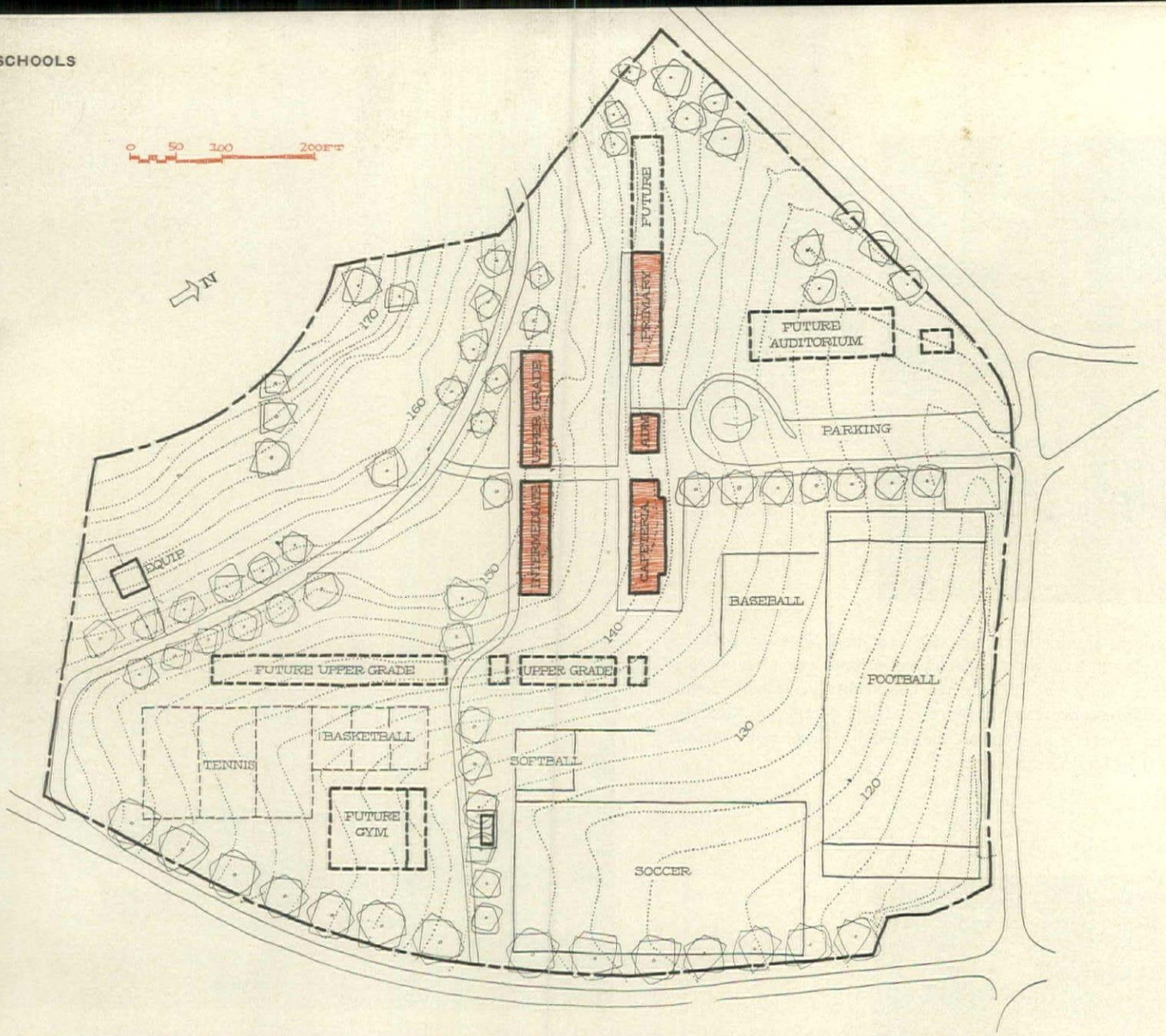




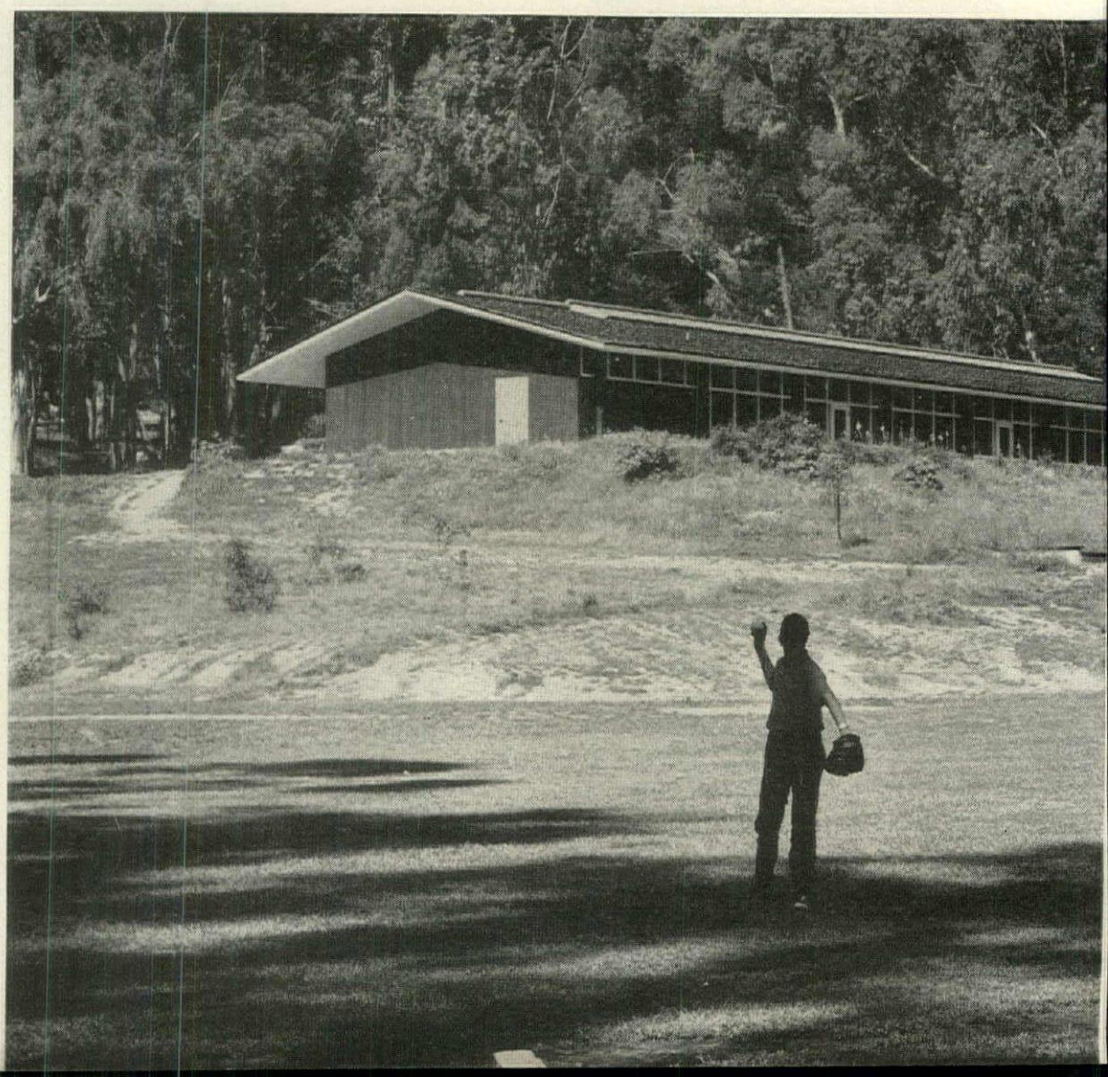
Lobby wall's dark soldier courses have made splendid base, show no staining above lowest 4″ and that not objectionable. Asphalt tile flooring throughout school has needed no replacement, is in best of condition. Wall is same brick as exterior but exterior has weathered to redder cast.



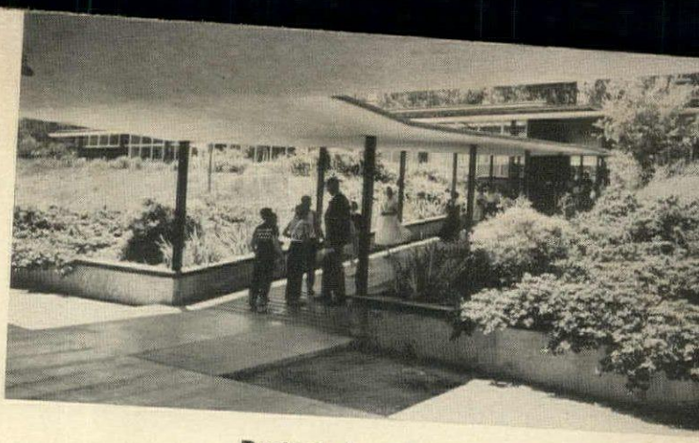
Covered walk: precast concrete projecting beams, like concrete cornice pieces, continue to give reassuring and delightful straightness and accuracy of line to roofs, missing in so many wood schools. Exposed concrete surfaces are a bit of a letdown here however, as they are almost everywhere. Saarinen suggests the only answer for concrete exposed to weather may be bushhammer finish. At Crow Island this is a very minor point in the total admirable effect of building really well done. Along with all the other examples it has provided and can still provide, Crow Island is a shining example of the fact that a contemporary building need not turn the least bit shabby.



Site has 60′ drop. Buildings parallel contour lines, sitting about halfway up the rise above playing fields. Future wings will fit land equally as well.



NORTH HILLSBOROUGH SCHOOL
LOCATION: Hillsborough, Calif.
ARCHITECT: Ernest J. Kump
STRUCTURAL ENGINEER: Mark Falk
MECHANICAL ENGINEER: The Coddington Co.
GENERAL CONTRACTORS: Joseph Bettancourt



Protected walk between wings runs through gardens of wild flowers.

FINGER-PLAN SCHOOL REFINED

The principle of quiet refinement is beginning to show up in the work of many of the bright young architects of the thirties who are now a little older but still bright. Today, when a Kump school, for instance, has a new idea in it, it is likely to be one almost invisible to the lay observer—a quietly significant refinement of a good older idea. This could hardly be better illustrated than by Kump's North Hillsborough School in Hillsborough, Calif.

The Kump office has designed some 50 "trilateral" schools out in the coastal climate—rows of classrooms lighted naturally from windows on each side and also from clerestories or top skylights. Expressed in the Acalanes high school in Lafayette, Calif., the office's governing ideas in succeeding years have also included sprawling plans, modular dimensional order, pitched gable roofs with interior soffits following the roof pitch, outdoor corridors under the eaves, and structure of rigid steel bents, with all walls and partitions nonbearing. Hillsborough has all of these; it also has two esthetic qualities a little harder to list simply: a refined rusticity of environment, and a wonderful wedding with the natural forms of the land. But as proper in a still-advancing practice, the reuse of all these ideas again at Hillsborough is something of a culmination. Architects and builders will be interested, for example, in the comparative sections on p. 142 showing how the usual exterior columns on a Kump school have this time been pulled back into the wall—but only on one side.

As the bright young architectural offices get a little older, they also become more conscious and less erratic, with no time

Photos: Roger Sturtevant



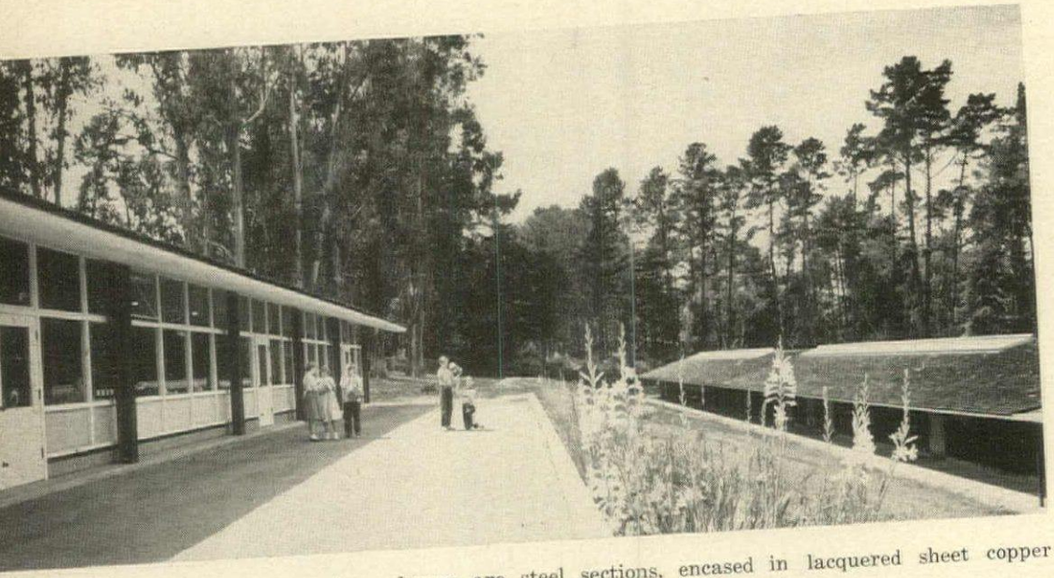
to waste on soft pencil sketches (". . . It's sound architecture to reuse proven, sound architectural ideas, modifying and refining them. . . . This seems to be more virtuous than to chase the soap-bubble of newness and uniqueness at all costs . . ."). But this does not mean treadmill design; it does mean, perhaps, that a certain kind of modern school has been defined and tested in practice, and modified, and found very good indeed. From here on out, the improvements are in hard pencil lines.

NORTH HILLSBOROUGH ELEMENTARY SCHOOL

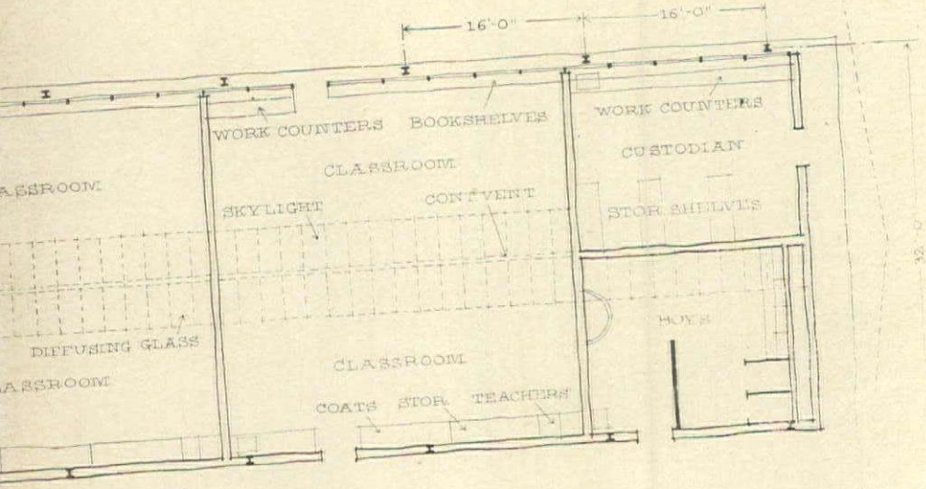
Hillsborough, Calif.
▲ Nine classrooms.

CONSTRUCTION: ▲ Reinforced concrete foundations, continuous and spread footings. Welded steel rigid frame structure with wood roof framing between steel members. ▲ Wood frame walls. ▲ Window walls, glass in steel sash or wood stops, curb to ceiling. ▲ Roof, redwood shakes, cement plaster soffits; fiber acoustic tile ceilings. ▲ Wood frame partitions. ▲ Toplighting, aluminum puttyless skylights over frosted crystal diffuser. ▲ Artificial lighting, concentric ring fixtures. ▲ Heating, radiant panels, copper tubing in reinforced concrete floor slab.

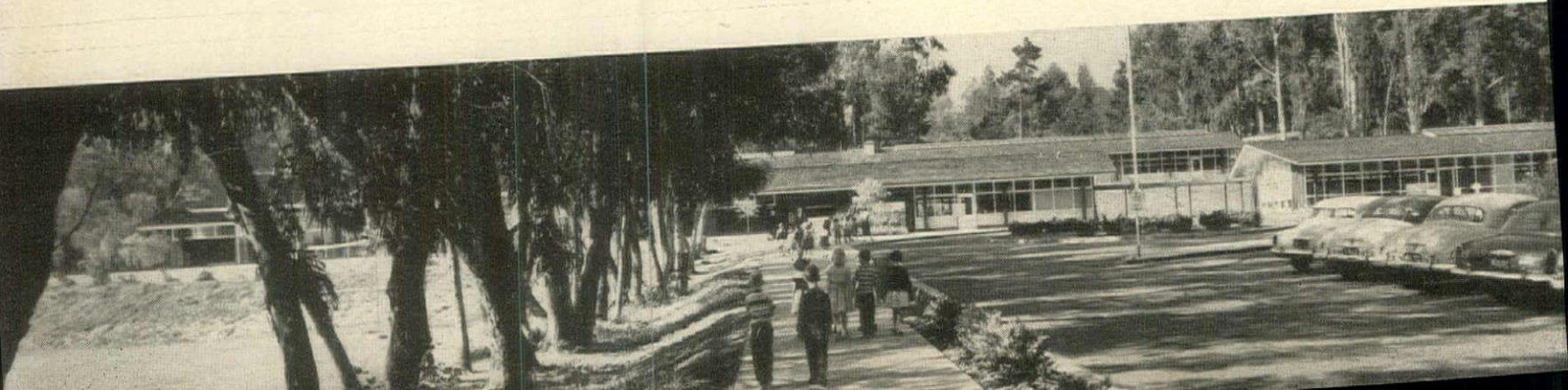
▲ COST: $281,555; $13.50 per sq. ft.

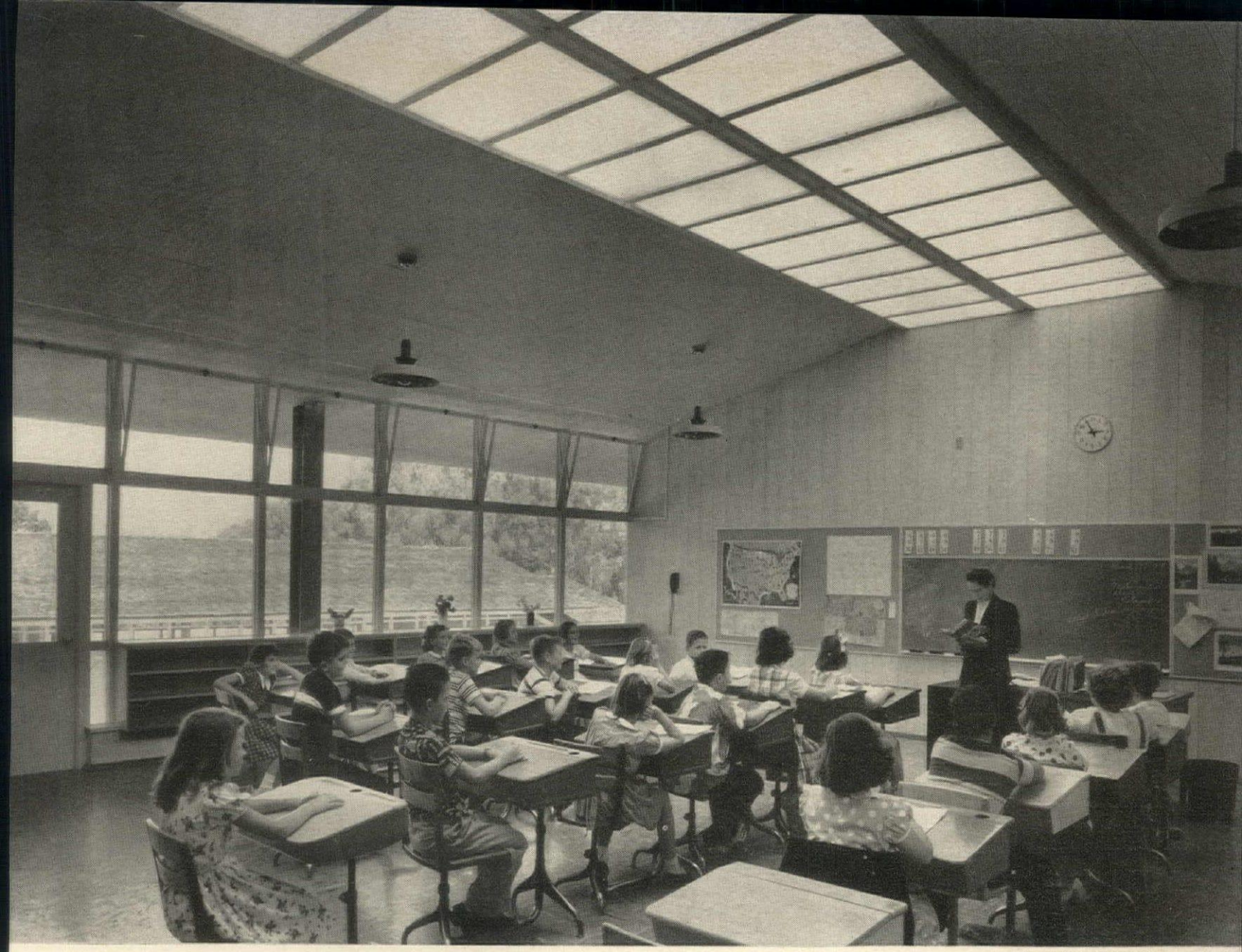


Upper wing: exterior columns are steel sections, encased in lacquered sheet copper



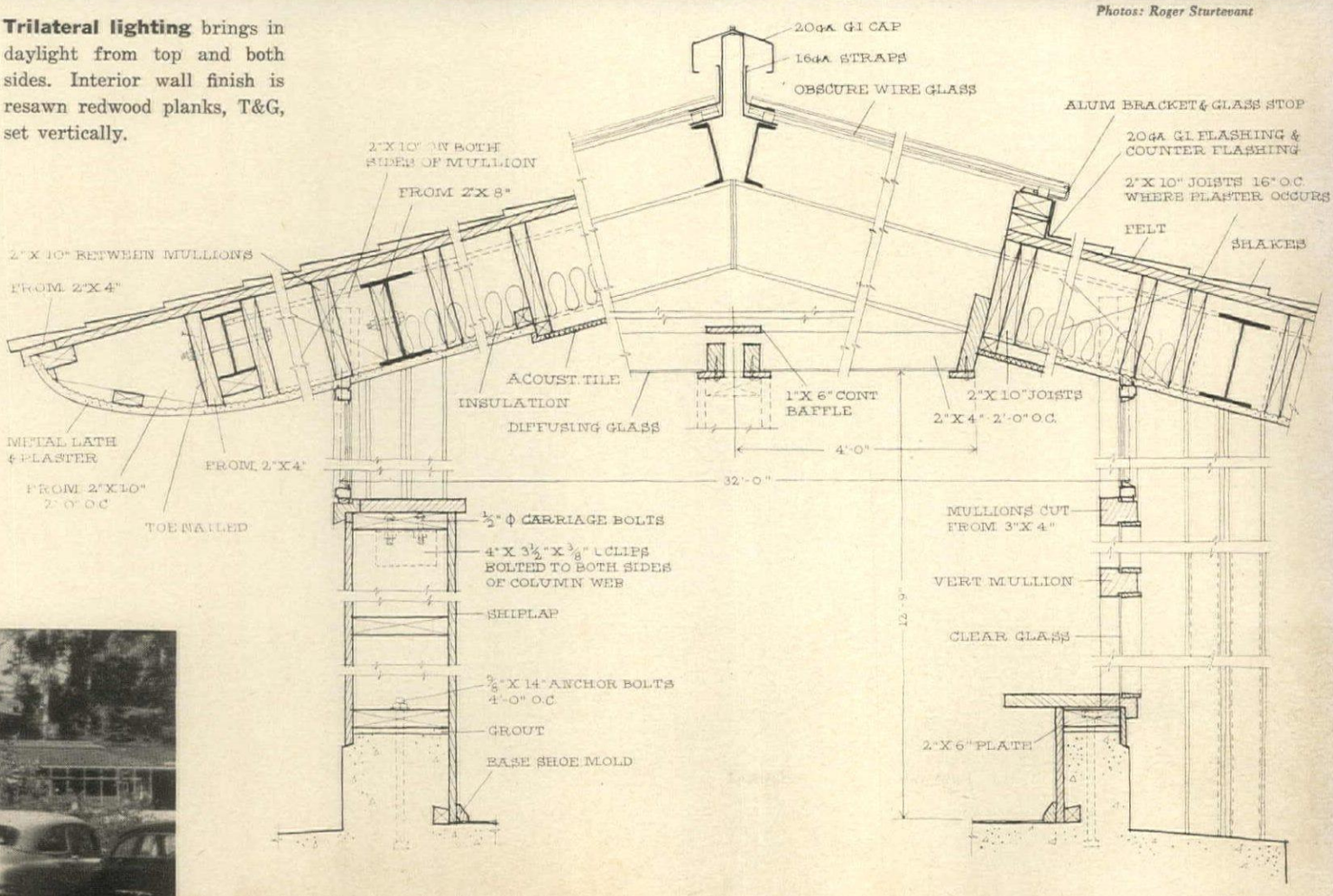
Approach to school is down pleasant tree-shaded walk (see also p. 129).



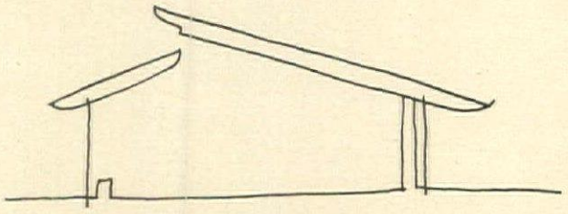


Photos: Roger Sturtevant

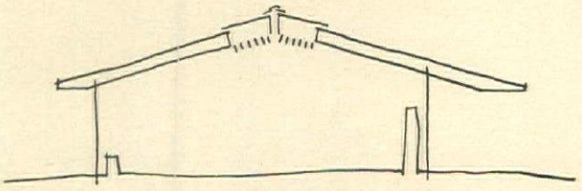
Trilateral lighting brings in daylight from top and both sides. Interior wall finish is resawn redwood planks, T&G, set vertically.



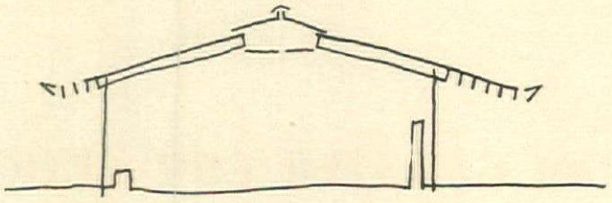
Variations on trilateral theme by Kump office are shown in cross-sections of several of Kump's many postwar schools.



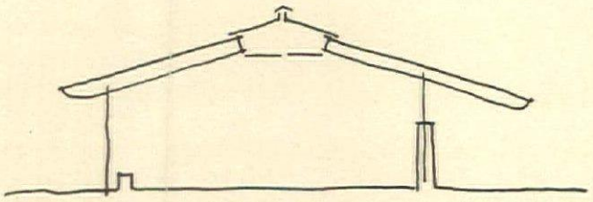
In Wasco High School some rooms have clerestory lighting; all vertical framing is set outside exterior walls.



In Laurel Creek Elementary School, central skylight has eggcrate diffuser under it; framing again is outside.

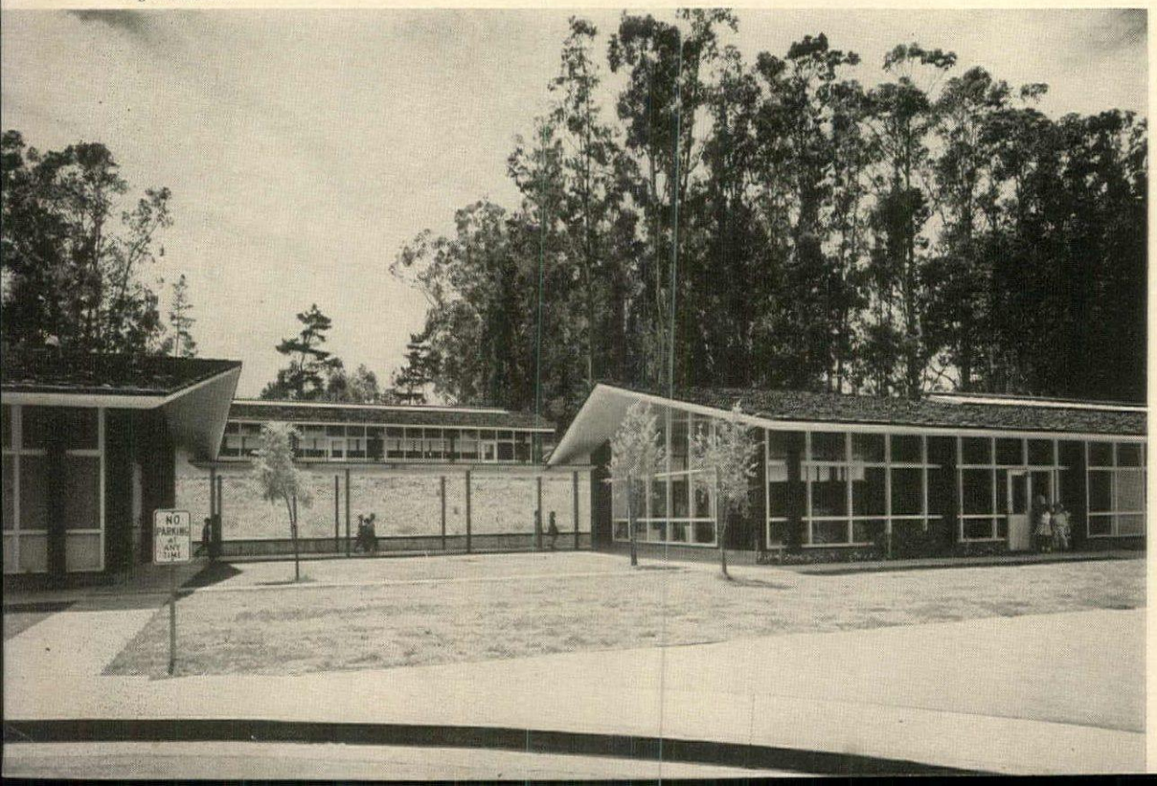


In Broadway Elementary School, diffuser replaces eggcrate under central skylight; overhangs are slotted.



In Hillsborough Elementary School, framing is set outside one wall, but within wall on corridor side, giving clearer corridor under overhang.

Roger Sturtevant



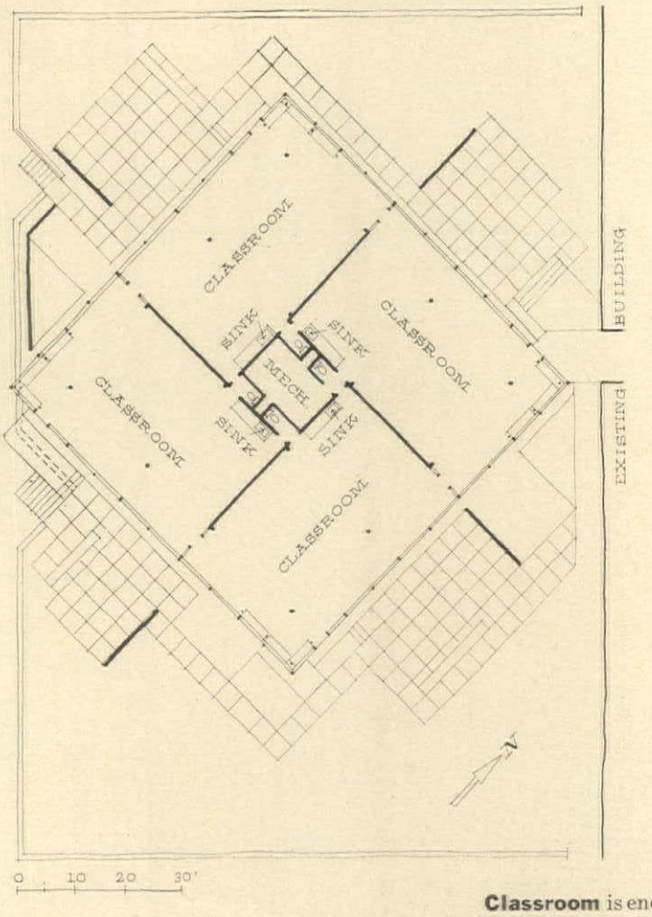


Photos: Hedrich-Blessing

Cluster is raised on pedestal to level of old school. Brick walls screen play areas.

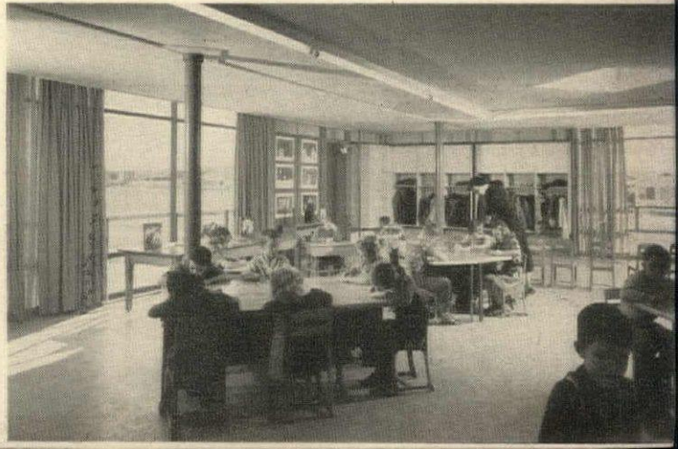
SCHOOLS

CLASSROOM CLUSTER FOR SCHOOL EXPANSION



Like a boat connected to shore by a pier, this neat cluster of four new classrooms is tied to an old school without attempting to match it. Caudill, Rowlett, Scott & Associates' prize-winning new addition to a Bartlesville elementary school was patterned after the school project this office executed for LIFE. There are differences in specific application, particularly in cross-section (p. 144), but the basic virtues of simplicity and dexterity are there. The four classrooms could have been arranged with folding walls so their floor area would double as assembly and eating space; because those facilities already existed in the older, parent school, this was not necessary.

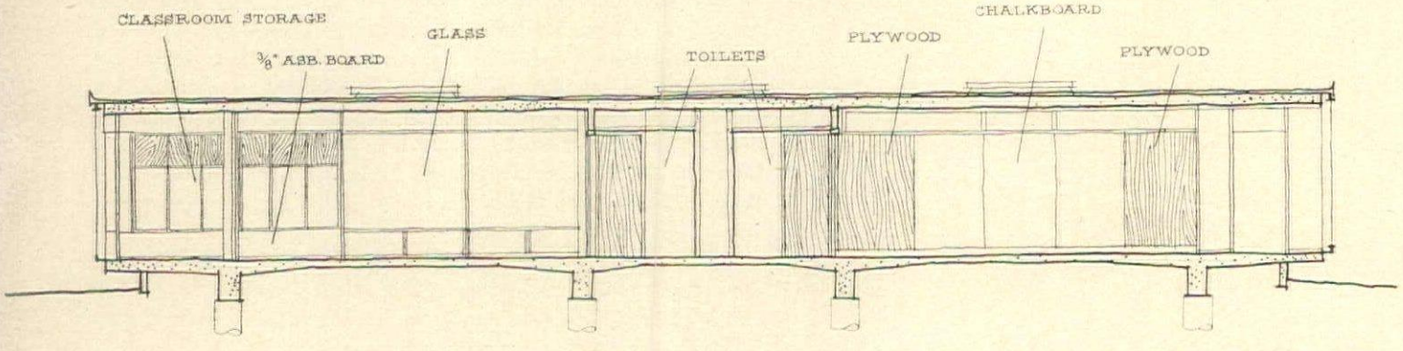
The image of a boat at a dock carries through to the trim appearance of the new classroom unit itself. Straight-sided, without overhangs, it floats lightly on its foundation, four outside staterooms around a compact central engine room. This is a lift-slab job, with glass block skylights set into the roof slab for interior daylighting. The exterior walls are steel sash, with floor-to-ceiling curtains to mask glare when necessary.



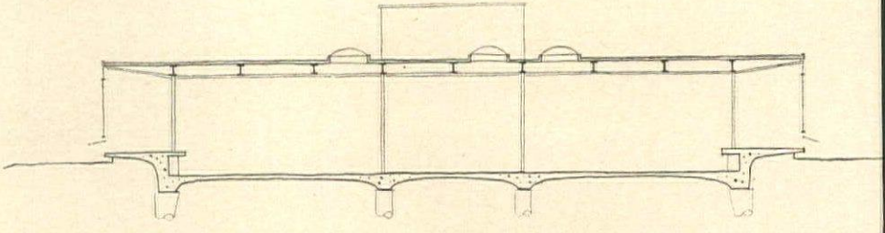
Classroom is enclosed by glass, storage partitions and teaching surfaces.

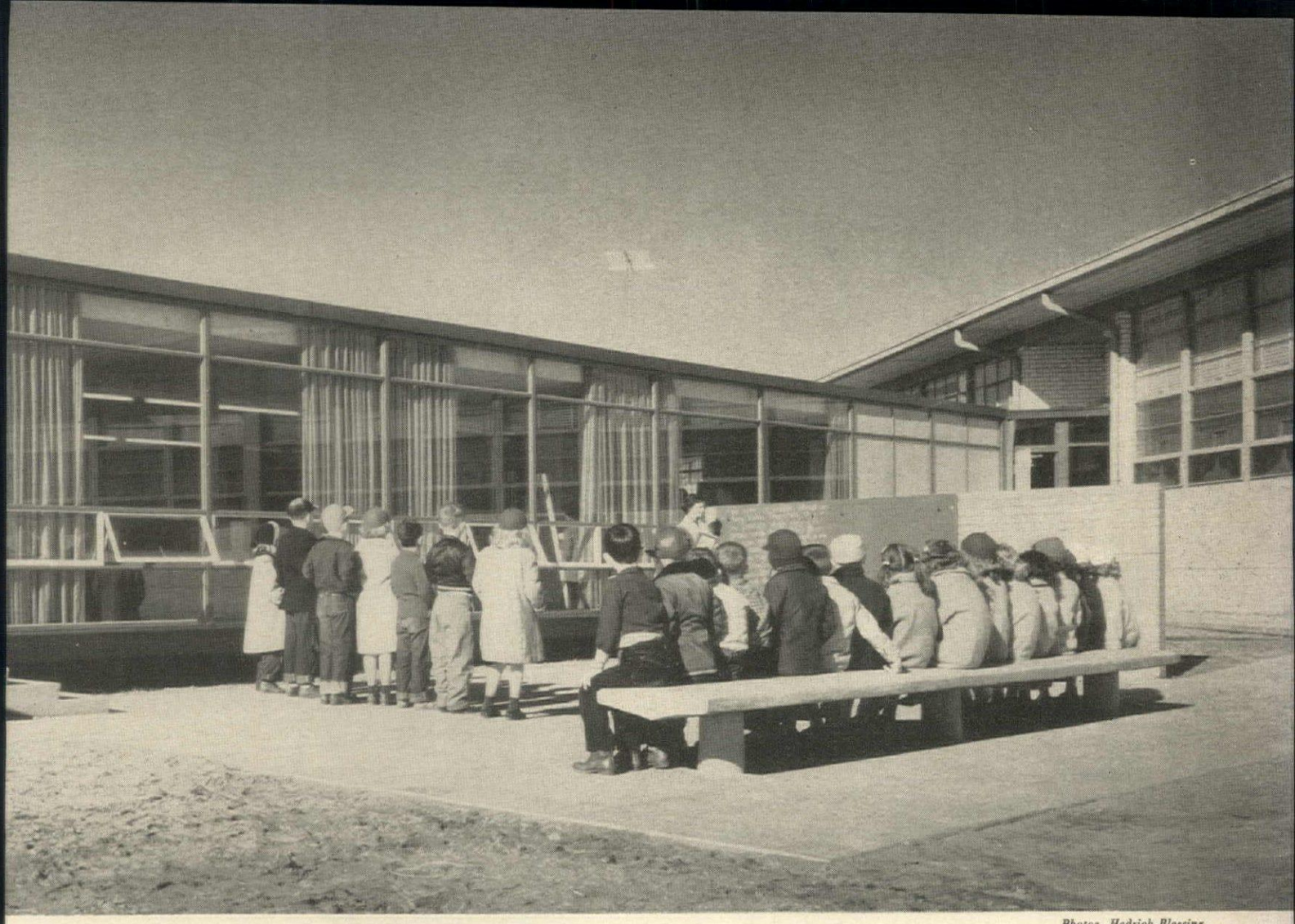


Exterior wall combines steel sash with intermediate projected windows. Opaque panels are abestos-cement board.



Slab section (above) was used instead of two-level scheme worked out for LIFE project (below). Reason: it was decided to use lift-slab method of construction in which flat concrete roof slab is poured on flat floor slab without any need for scaffolding and formwork, then jacked up columns into place. LIFE school used frame roof. In the Bartlesville job concrete slab roof was necessary to match fire rating of existing school to which cluster was attached.





Photos. Hedrich-Blessing

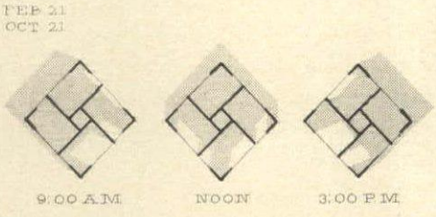
ARCHITECTS: Caudill, Rowlett, Scott & Associates
STRUCTURAL ENGINEER: A. M. Martin
MECHANICAL ENGINEER: J. W. Hall Jr.
GENERAL CONTRACTOR: Hoke Construction Co.

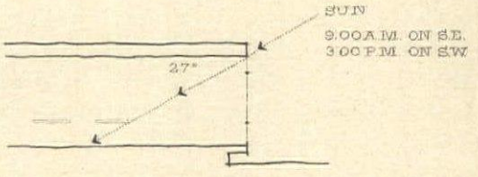
ADDITION TO JANE PHILLIPS SCHOOL

Bartlesville, Okla. ▲ Four classrooms. ▲ Student capacity, 120.

CONSTRUCTION: ▲ Reinforced concrete floor, lift-slab roof, steel columns. ▲ Asphalt tile floors. ▲ "Teaching walls" of dowelboard, chalkboard, and tackboard. ▲ Architectural projected steel windows. ▲ Acoustical tile ceilings. ▲ Glass-block skylights. ▲ Steel sash curtain wall. ▲ Radiant heating coils in floor, with forced warm air hot-water supplementary heating.

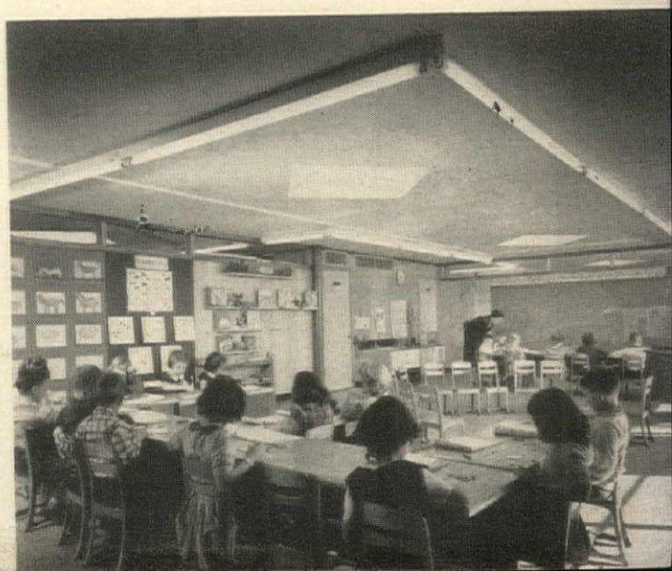
COST: $64,433. ▲ $12.63 per sq. ft.





Daylighting was accomplished with glass walls without overhangs. Plan diagrams and section above show maximum extent to which direct sunlight enters classroom.

Electric lighting is by fluorescent tubing on ceiling, assisted naturally by glass-block skylights.



A NEW KIND OF HIGH SCHOOL

"Room A" and the campus plan have gotten together

The trouble with high schools is that they are too big. But unless they are too big, they are too little.

In a little high school, who can learn ceramics and electric wiring and clothing management and double-entry bookkeeping? A small high school has become, by definition, an underprivileged high school.

But a student body large enough to support the specializations to which the modern comprehensive high school is committed, is a student body too large to form a workable community. Individuals get lost in the shuffle. Teachers and students wink their lights at each other briefly and pass like ships in the night.

The answer does not seem to lie in renouncing ceramics and electric wiring. People want them. Pretty soon they will want electronics. Nor does the answer lie in return to the caste-tinged stratifications of college prep, commercial and manual arts schools. Most communities have accepted the cross-section, comprehensive high school as a social good and an educational gain.

So how to keep bigness, without giving in to bigness?

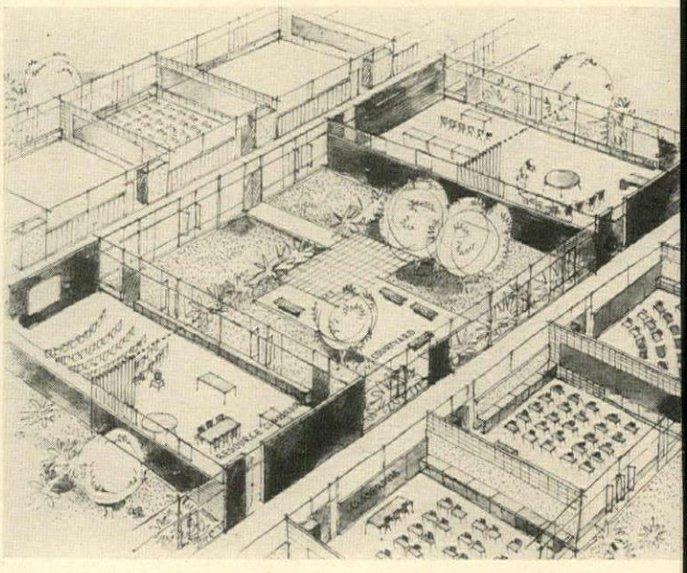
There is an answer. It is turning up so suddenly in so many high schools now in the planning stage, and it is stimulating such interesting designs, that it looks like the most exciting thing to happen to secondary education since the old academy tradition was supplanted.

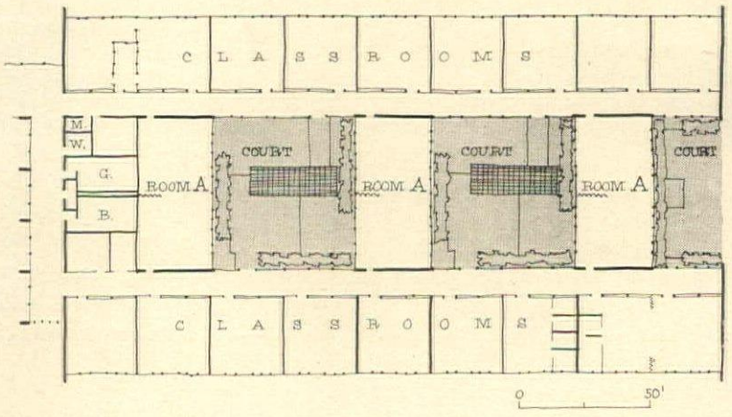
These new schools are the offspring of two parents—Room A and the campus plan. The parents happen to be hardly more than babies themselves. Things are moving fast.

What is Room A?

This mysterious tag turned up a couple of years ago at a skull session of school planners. "We have no name for this facility we are talking about," said Consultant N. L. Engelhardt Sr., resting his pointer on a diagram, "so for the present let's designate it Room A."*

Room A is the work L of Crow Island (p. 135) grown up and gone to high school. It is meant to overcome one particular drawback of bigness: In the big school, what the teachers teach, and what the students learn, and whom everybody gets to know, become too compartmentalized. Room A is for putting the pieces and the cliques tgether. It might be the scene of such a project as making a globe, thus calling geography, mathematics, construction work, and drafting together. It ought to be a conversational and reference and meeting center. If it were in a house, it would be that combination of work, living and play space called "the family room."





LINTON HIGH SCHOOL, Schenectady, N. Y.
PERKINS & WILL, RYDER & LINK,
architects and engineers

* Nobody has found a good name yet. The best the consultants have come up with are "general education laboratory" and "basic instructional unit," not exactly catchy. The best the architects have produced are "project area," "resources room," and "multipurpose," all somewhat misleading.

The first Room A

The prototype Room A is at Linton High School in Schenectady, now under construction. (See plan and rendering, left.) In this school, Room A is prudently arranged to become two classrooms if need be. It occurs at convenient intervals in the academic wing and it is a facility somewhat to itself like the dramatics or journalism rooms, *but not quite* because it is associated with a social court and links classroom corridors. It is decidedly a new thing and it has already caused a lot of excitement and admiration.

The role of the campus plan

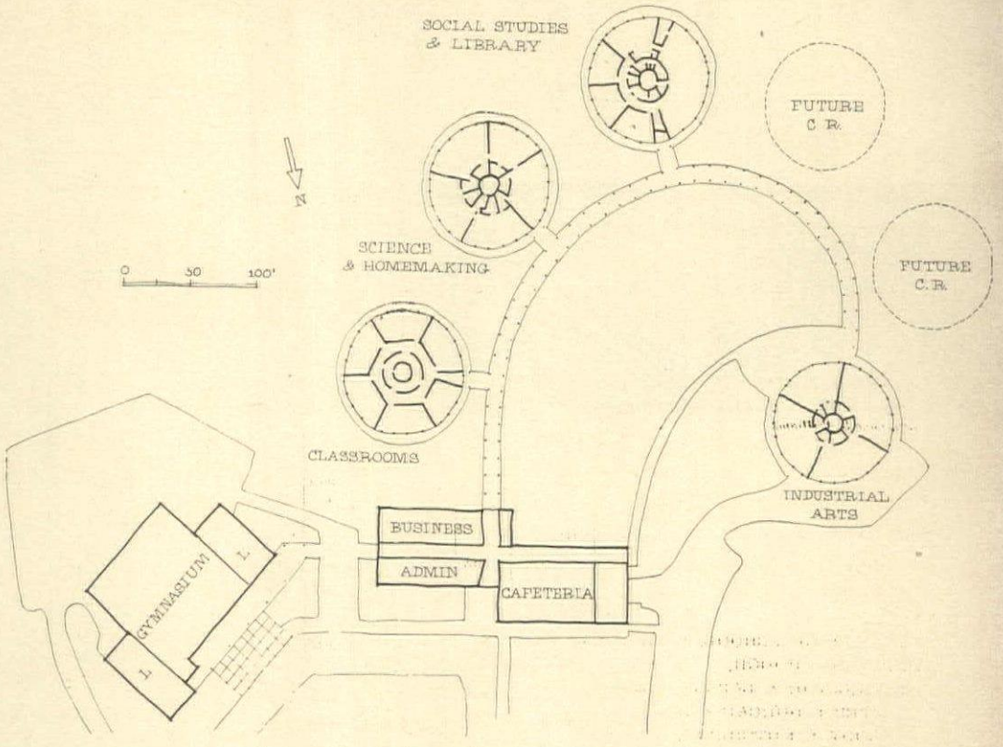
The campus plan has a great many practical advantages and economic justifications. But at bottom, the campus plan is a hit because it counters a second major disadvantage of bigness: The big high schools, especially those in one story, had begun to look appropriately like mills.

Even when the campus plan school is fundamentally organized like the mass school, it takes much of the curse off size. One of the nicest recent examples of this legerdemain is Old Saybrook High School, now under construction (photos, right). Architect Ashley made good practical use of his circle form; he almost eliminated classroom indoor corridors, he got economical concentrations of utilities, his lift-slab construction worked out to $13.39 per sq. ft., and the school grounds *have* to be decently landscaped because trees provide the light control for round-the-compass orientation. But the exciting thing about his school is the decisiveness with which it breaks a big institution into pieces that proclaim a wholeness and completeness in themselves. Organizationally the plan seems somewhat forced but it does state, as well as any thus far, the emotional point to the campus plan.

Now to put the two ideas together, take a group of classrooms and set them apart, in the way the campus plan has made familiar. Then provide them with Room A as a heart and a center.

Thus you do have a unit that actually is a whole and complete thing in itself, a workable miniature school. Take a group of these units, all using in common a set of specialized spaces and equipment (such as shops, gym, auditorium) and you have a new kind of high school, the Group School.* Examples are overleaf.

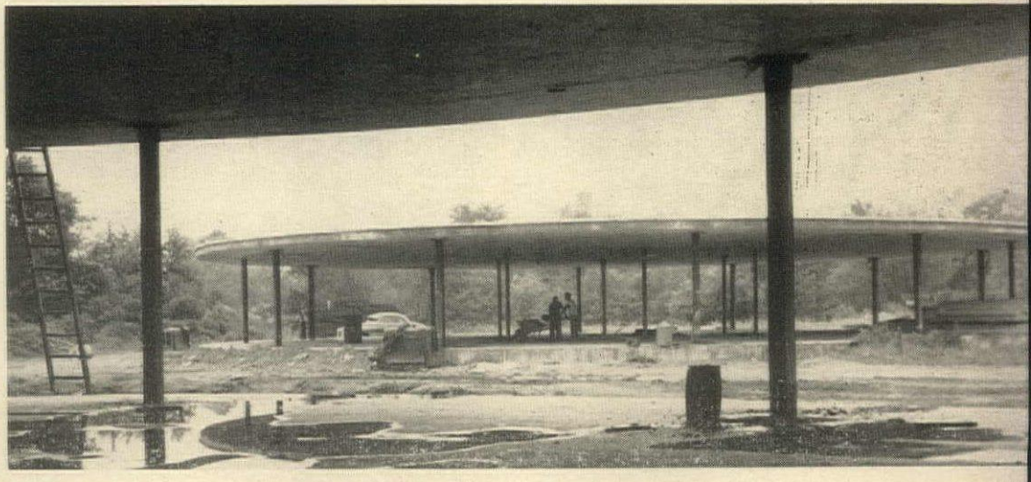
* More nomenclature trouble: this concept is also known as "school-within-a-school" and "little school," tags that are too cute for adolescents.



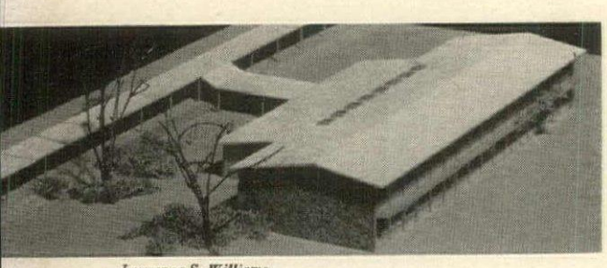
JUNIOR-SENIOR HIGH SCHOOL, Old Saybrook, Conn.
WARREN H. ASHLEY, architect
MARCHANT & MINGES, engineers
ENGELHARDT, ENGELHARDT & LEGGETT, educational consultants



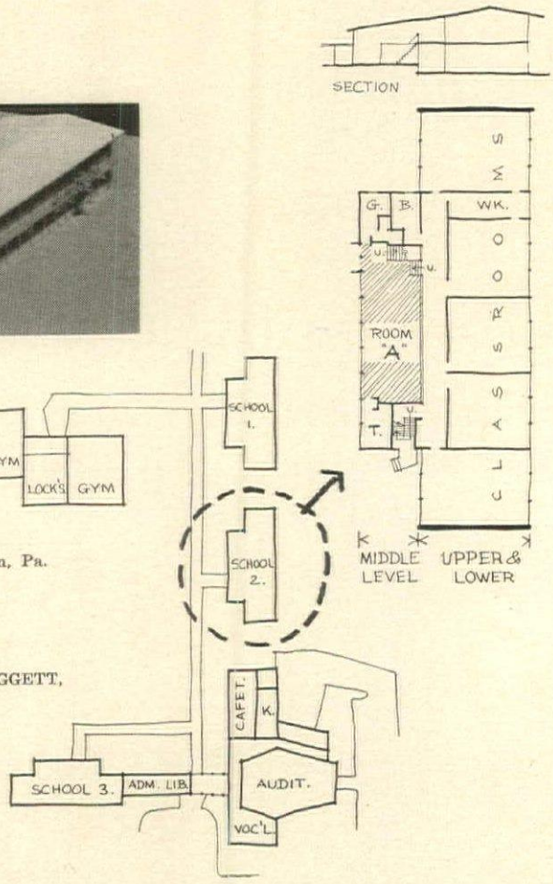
Burian Moss Photographer



The result is the full-fledged group school

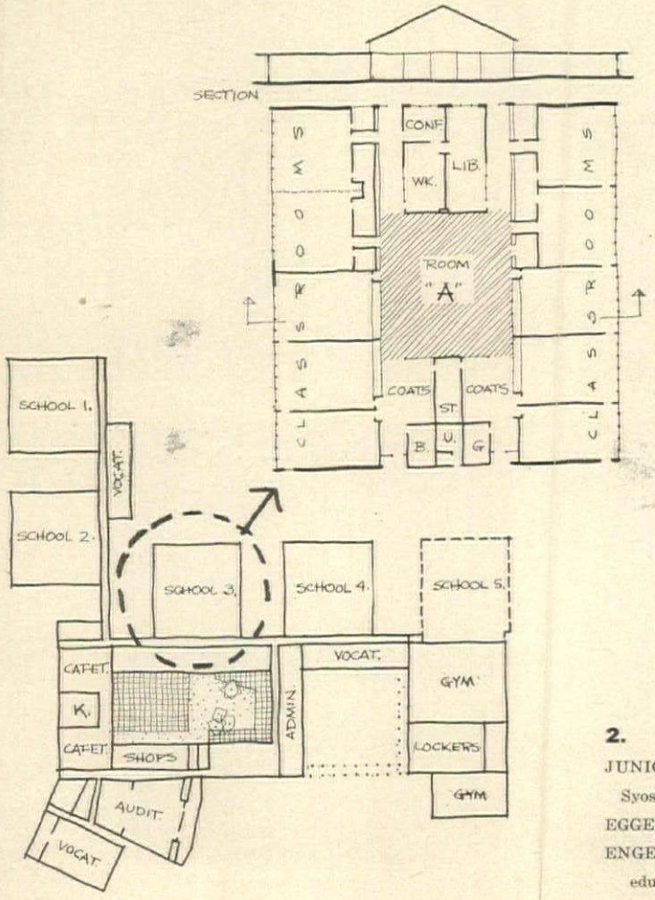


Lawrence S. Williams



1.

JUNIOR HIGH SCHOOL, Lower Merion, Pa.
HARBESON, HOUGH,
LIVINGSTON & LARSON, architects
CHESTER I. DUNCAN & SON, and
MOODY & HUTCHISON, engineers
ENGELHARDT, ENGELHARDT & LEGGETT,
educational consultants



2.

JUNIOR-SENIOR HIGH SCHOOL,
Syosett, L. I., N. Y.
EGGERS & HIGGINS, architects
ENGELHARDT, ENGELHARDT & LEGGETT,
educational consultants

Each group school typically includes a cross-section of the student body who take their common academic subjects in their own group school, and pool their specialized interests and learning in group school projects. In its pure form, each group school includes all three grades of a junior or senior high. It is a miniature version of the big student body, with the advantages of association among slightly different age groups and the experience of working up from greenhorn to lordly senior, within the group. Done this way, each group school will probably have its own teams, maybe its own newspaper. But it is also being tried out on the basis of separation by grades, one grade to a group school.

Either way, a group of 250 to 300 students and a team of eight to ten teachers seems to be the most desirable size. (But they go as low as 150 and as high as 400.) The over-all size of a school organized in this fashion is indefinite. The largest now being considered is a 3,500-student school with twelve groups.

1. Room A in the entrance

Lower Merion Junior High (diagram, plan, and section at left) is a clear and carefully worked out example. Each group school will house 250 students, divided into two sections, each with its own identical floor, of 125 students each. Room A is on the split level between, at entrance grade. This ingenious plan will make it all but impossible for Room A *not* to become the heart of a unit, and all but impossible for the denizens, both teachers and students, *not* to identify themselves as members of the group.

2. Room A in the center hall

Syosett Junior-Senior High School (below) uses a large central hall for Room A. Syosset is more a wing-plan than a campus plan, but its group schools are so clearly articulated and complete that they stand as entities.

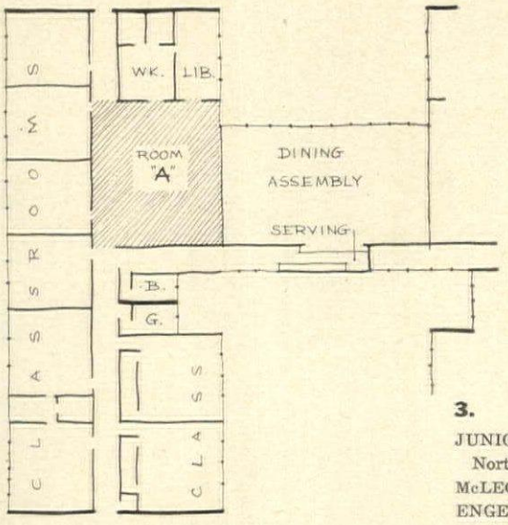
3. Room A off dining

At North Hagerstown High School (drawings, right) even the dining rooms are associated with the group schools, with each of two lower-school units sharing one dining room and each of two upper-school units sharing another. Note how Room A is again at the heart of things.

4. Room A in the corridor

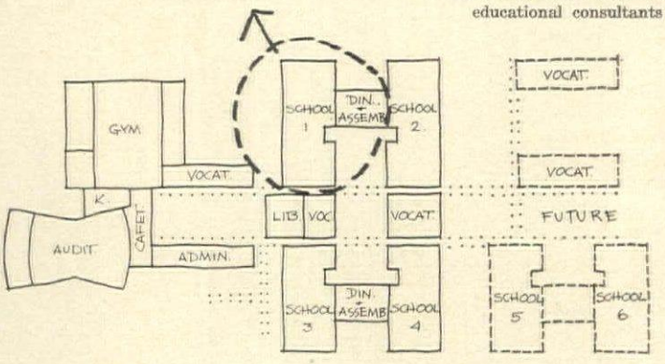
The campus plan instigated the group school, but the two wing plans already shown demonstrate that the campus plan is not a *sine qua non*. Now observe Architect Henry Blatner's preliminary plans for an upstate New York community (below). After trying several campus schemes for this group school, he felt they all suffered from being too fussy and too inflexible. He set himself the task of making a group school compact. His two junior-high group schools occupy one wing, his two senior high schools another, with administration between. He took advantage of a slope to put specialized spaces (except a few purely for the junior high) underneath the classrooms. This school would be interesting from the zoning angle alone: he has zoned vertically what it is customary to zone horizontally.

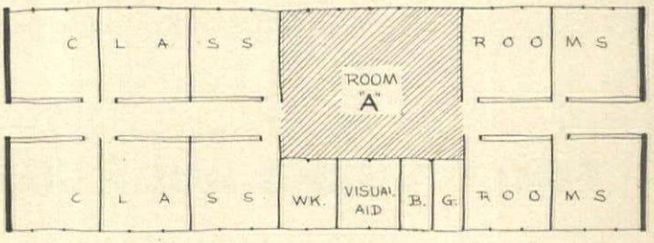
How do you get Room A into standard-width classroom wings like this? The same way that Crow Island got lounges—by opening up the corridor. Blatner's school may have the most ideas to offer to the mass school that wants to convert to the group school system in an old building.

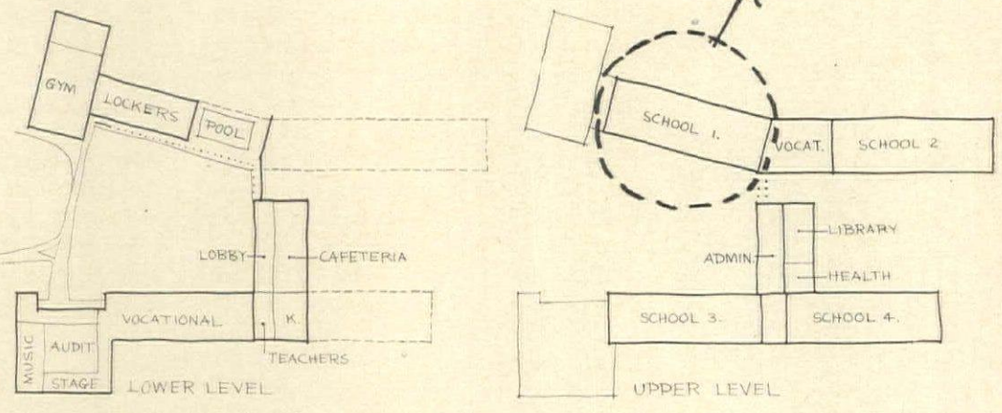


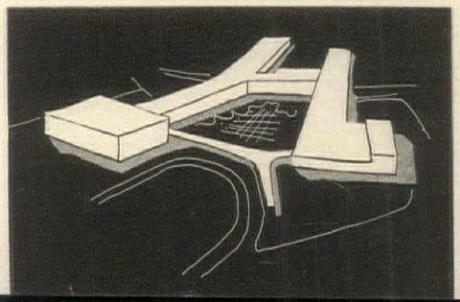
3.

JUNIOR-SENIOR HIGH SCHOOL,
North Hagerstown, Md.
McLEOD & FERRARA, architects
ENGELHARDT, ENGELHARDT & LEGGETT,
educational consultants



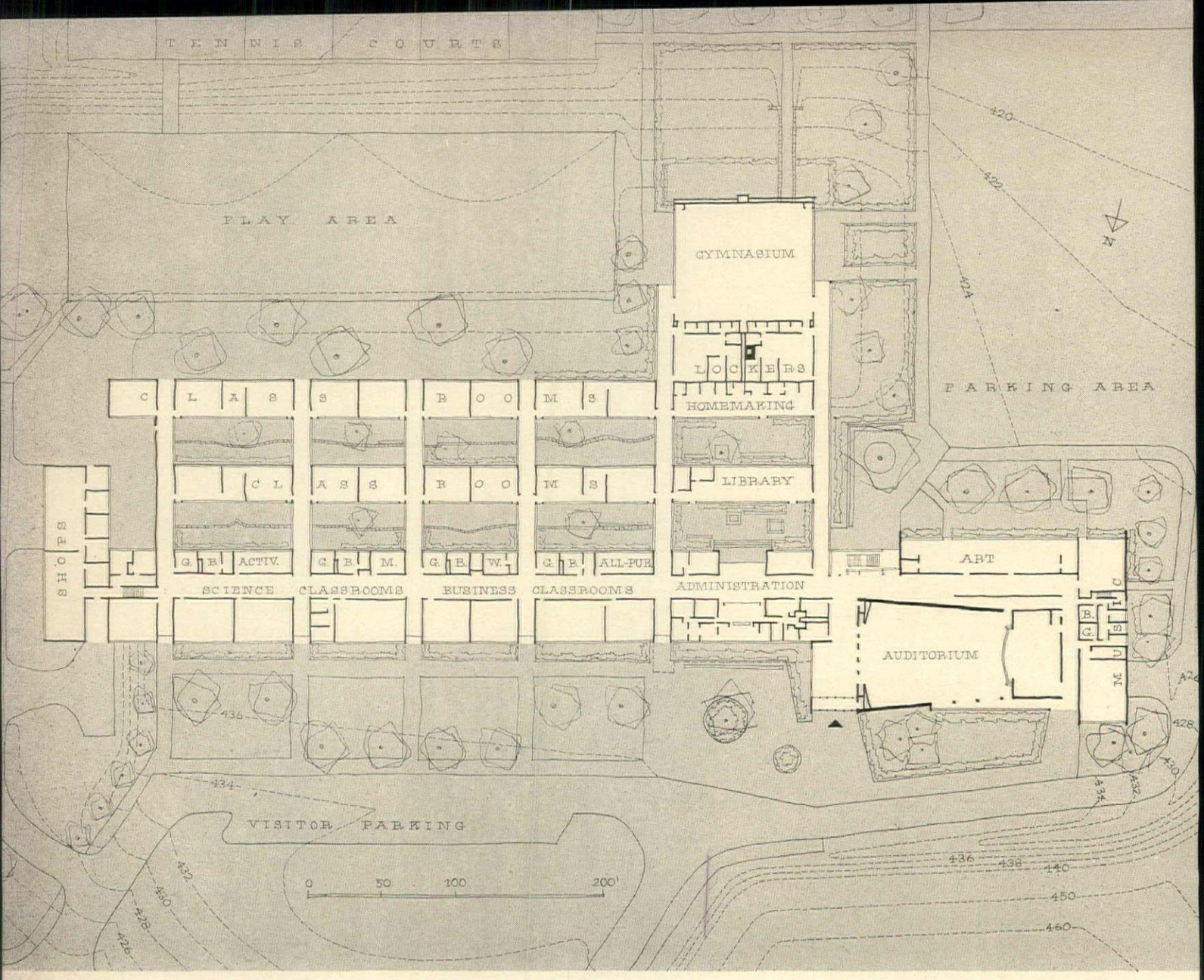






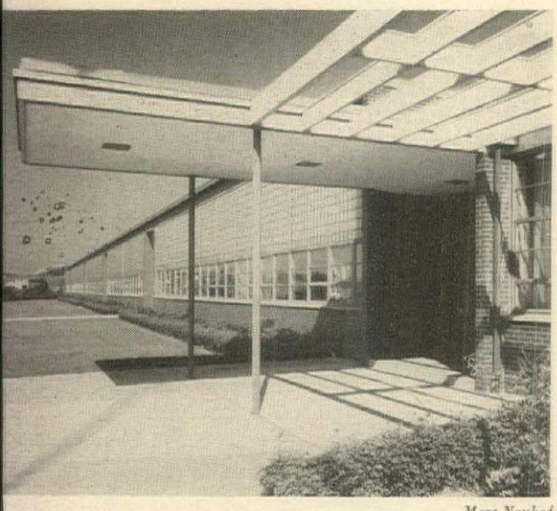
4.

JUNIOR-SENIOR HIGH SCHOOL
for suburb in upstate New York
HENRY L. BLATNER, architect
ENGELHARDT, ENGELHARDT & LEGGETT,
educational consultants



SCHOOLS

TWO HIGH SCHOOLS COMPARED: one is built for a conventional program,



Marc Neuhof

NORTH ALLEGHENY JUNIOR-SENIOR HIGH SCHOOL
ARCHITECTS: Mitchell & Ritchey

We are plainly entering a time of experimentation in high school education. The group school, discussed on the preceding pages, looks like the most logical form for the future, but, as of now, the educators themselves cannot say with sureness what the typical program may be a decade from now. The architects certainly do not know either.

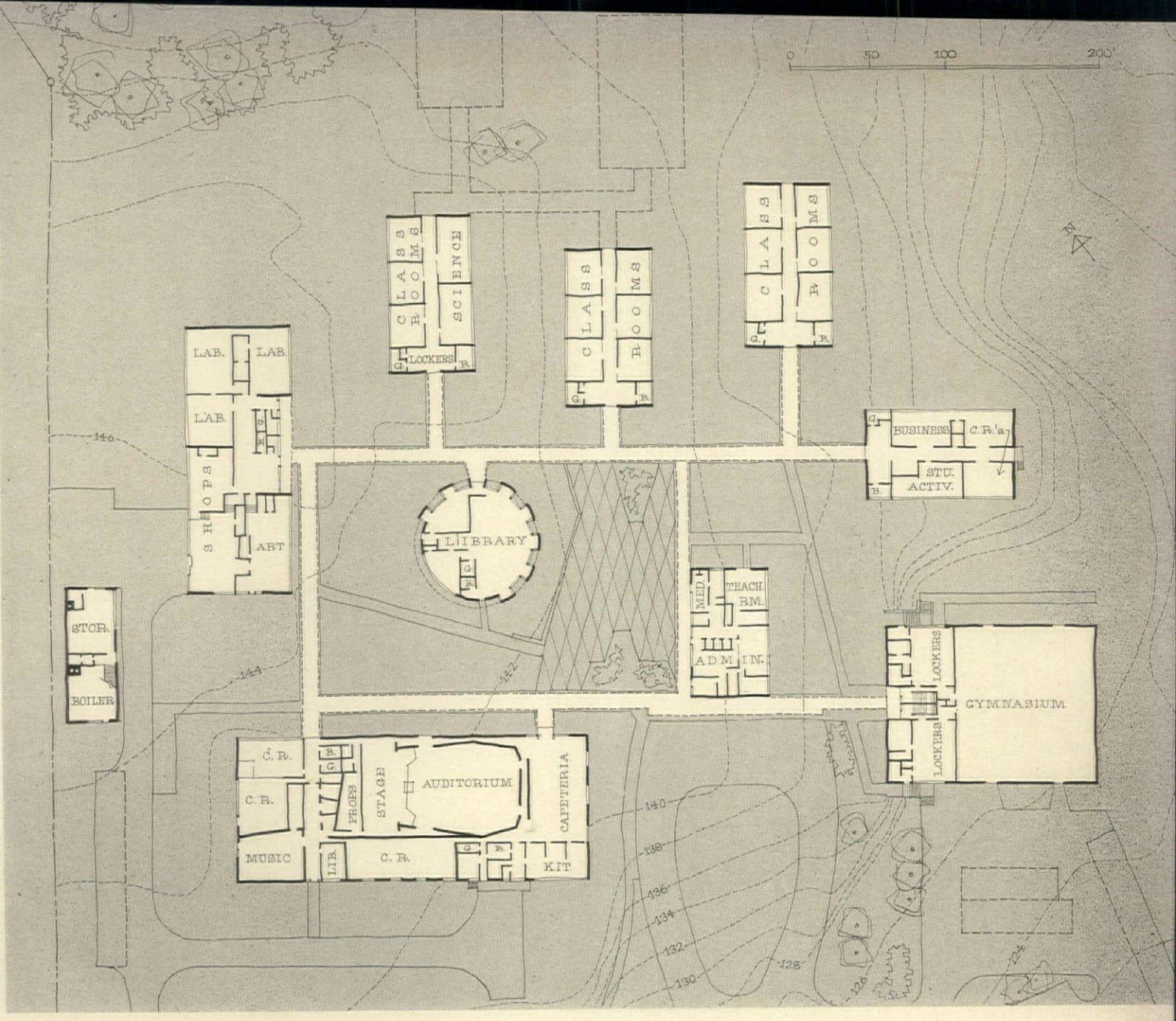
This is frustrating because in the next few years an immense amount of high school building will have to be done, and the chances are that these new schools will have to serve programs that will have been radically changed after the fact of building.

Right now, the two kinds of high schools most commonly being planned are typified by the two schools shown above. Both are superior examples of their type.

▸ North Allegheny Junior-Senior High School is well organized for secondary education as it has been conducted for a generation, and still is in most places. It assumes one large pool of students, one large pool of classrooms and standard class intervals of about an hour. Basically this is the kind of program that operated in the high school you probably attended.

But North Allegheny is not old hat. The way its mass is broken up, the way its courts invite specific and frequent use, the way it can let out its hem and expand, show that the architects have rethought the forms appropriate to a standard high school. They have come up with a fresh and sensible plan. North Allegheny might well stand as the apogee of the conventional secondary school.

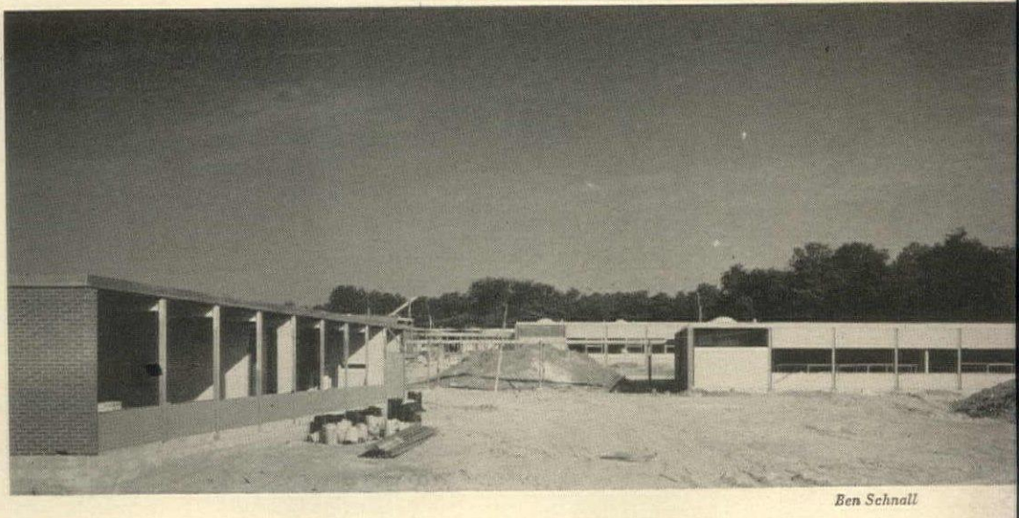
▸ Northport Senior High typifies the campus plan, an arrangement of separate smaller buildings that has emerged only



one for come-what-will in educational policy

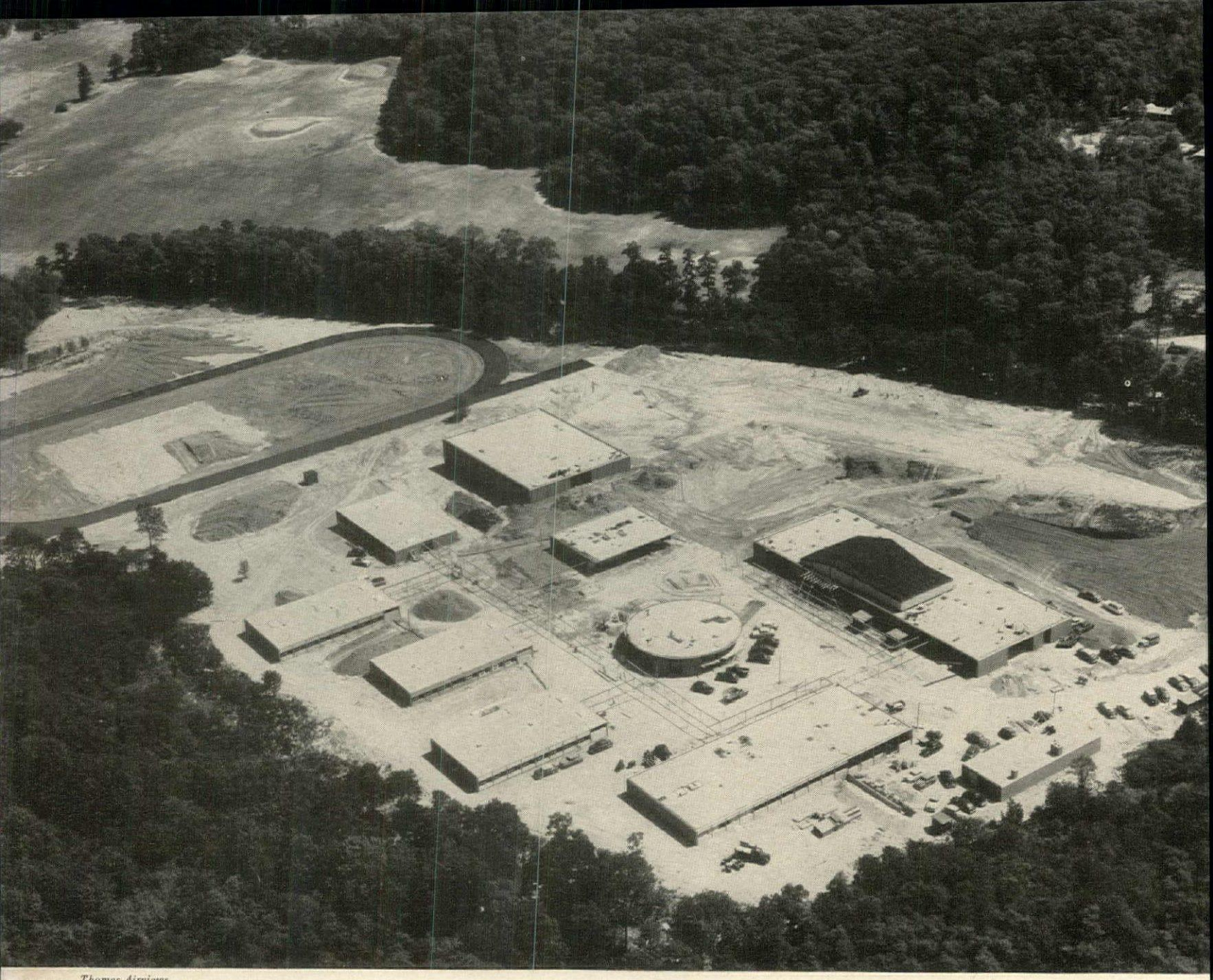
in the past few years. Northport too happens to be built for a conventional program. But it has been planned with other possibilities in mind. Its classrooom houses are easily adaptable to a large-block-of-time teaching system, with correlated studies supervised by a faculty team. To allow for the flexible space such a program needs, partitions can be removed, the whole house opened up, and folding dividers put anywhere. The houses obviously are also adaptable—with some additions—to the group school scheme. In short, the good campus plan as typified by Northport is a link between the conventional program and the amorphous future. That is why it is so significant a form for now.

Architecturally the good massive school and the good campus school each demands its own distinct kind of focal points, as is shown on the pages that follow.



Ben Schnall

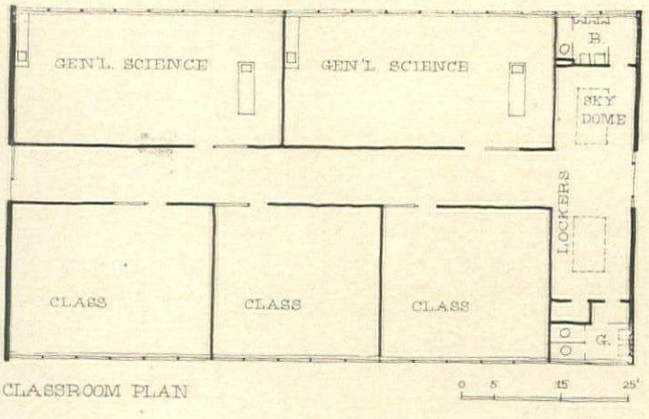
SENIOR HIGH SCHOOL AT NORTHPORT, L. I.
ARCHITECTS: Ketchum, Gina & Sharp



Thomas Airviews

Construction airview shows shops in left foreground

For the campus plan, outdoors is the matrix; the important focal points move indoors



CLASSROOM PLAN

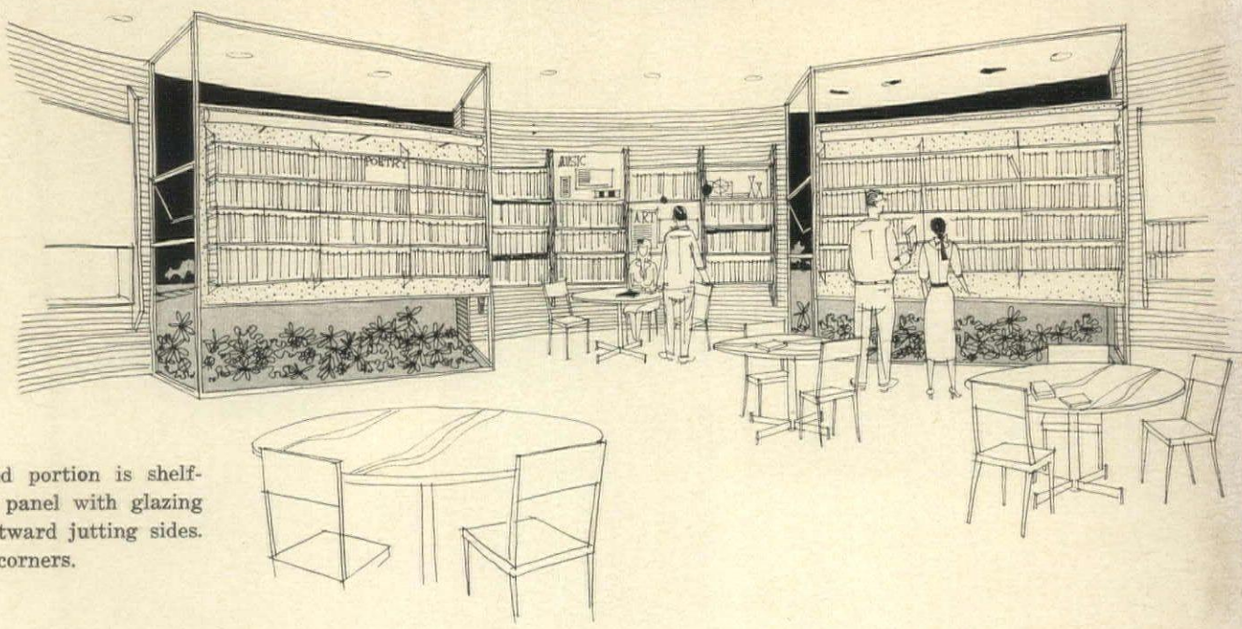
Classroom house takes 150 students. Each house has own flooring and ceiling colors; unity of building is emphasized, division into rooms minimized. Block partitions can be easily removed or relocated. Note concentration of utilities at one end. If adapted as group school, added "Room A" (p. 146) would be needed.

SENIOR HIGH SCHOOL at Northport, L. I. ▲ 33 classrooms. ▲ 800 students; central facilities sized for 1,000.

CONSTRUCTION: ▲ Concrete and block foundations, reinforced slab on grade. ▲ Cavity brick bearing walls. ▲ Painted block partitions. ▲ Suspended acoustic tile ceilings. ▲ Roofs, metal deck on steel frame; library, circular cantilevered reinforced concrete lightened with radial cardboard tubing. ▲ Plastic skylighting in auditorium. ▲ Aluminum sash. ▲ Flooring, asphalt and vinyl tile. ▲ Forced hot water heating.

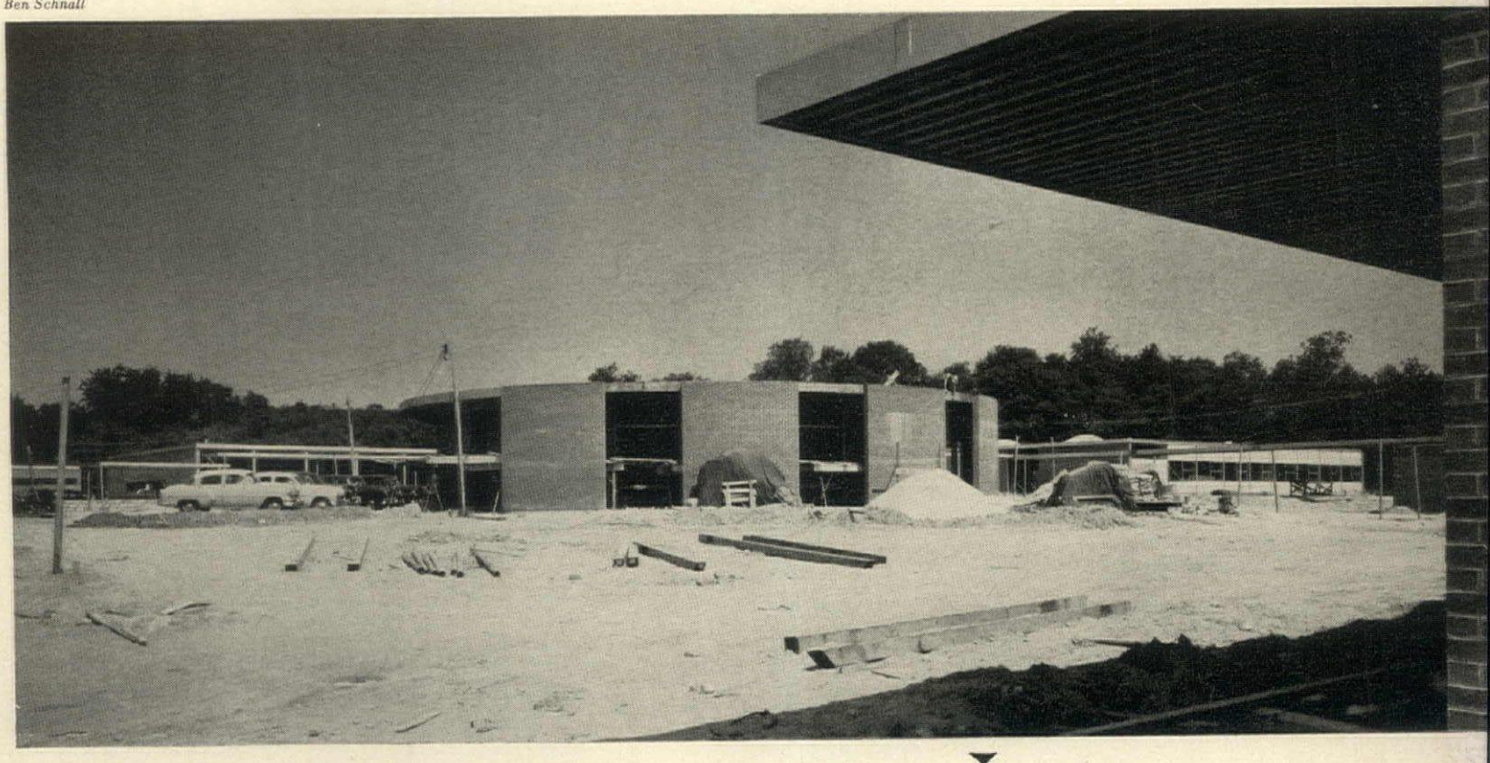
COSTS: $1,478,168, including fees and all fixed or built-in equipment; $17.87 per sq. ft.

CREDITS: ▲ Architects: Ketchum, Gina & Sharp. ▲ Structural engineers: Severud, Elstad & Krueger. ▲ Mechanical and electrical engineers: Levy & O'Keefe. ▲ Acoustical consultants: Bolt, Beranek & Newman, Inc. ▲ Landscape architects: Tregenza & Briglia. ▲ General contractor: Ellis Chingos Construction Corp.



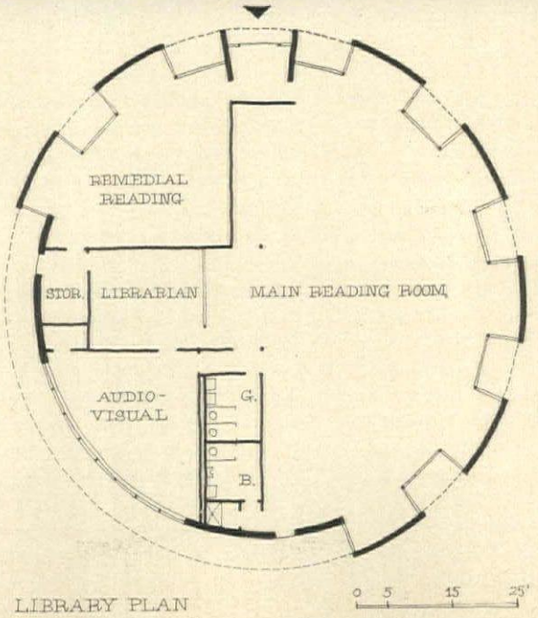
Library bay: indented portion is shelf-lined asbestos cement panel with glazing at top, bottom and outward jutting sides. Columns are at inner corners.

Ben Schnall



Central library dramatically illustrates important design consideration for campus-plan schools: focal points and high spots that give school its personality and individuality are essentially indoor spots. In contrast with mass school, outdoors here wraps around everything; it is the background, and designers have treated it so.

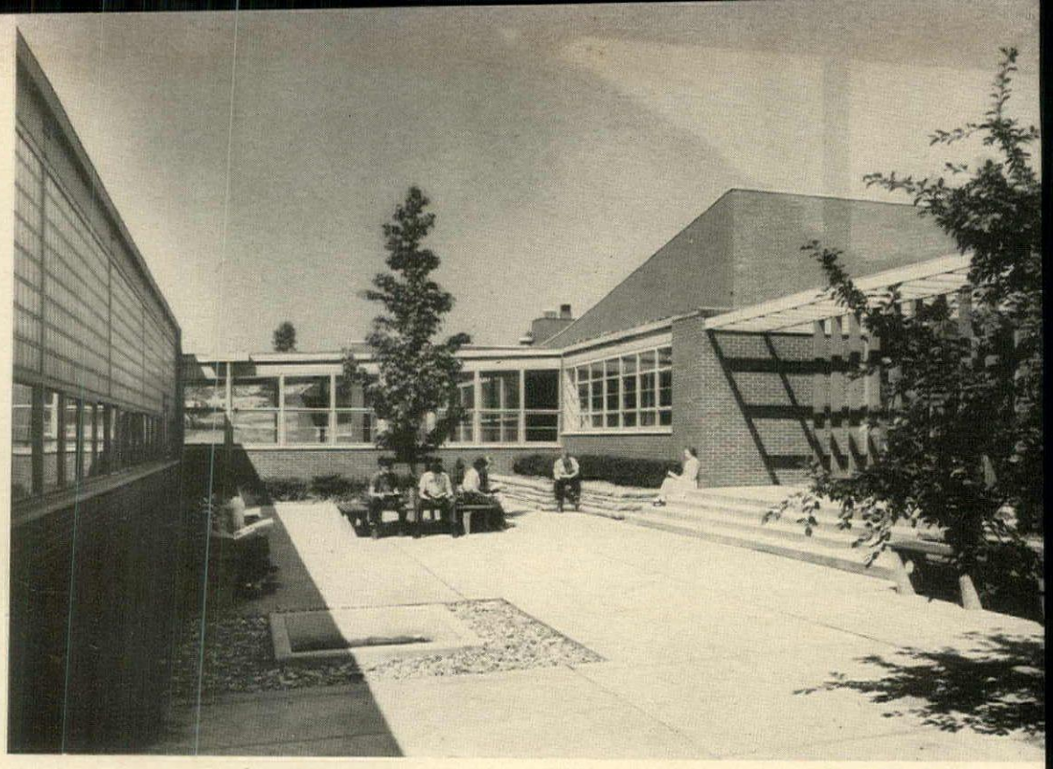
Exteriors in this campus group are unusually harmonious. (In most campus plans, gym and auditorium hardly appear on speaking terms with smaller units.) Note too how reading, the central skill and tool of education, is given central importance architecturally. This is departure from common current practice of placing library at remote dead end for quiet. Architects recognized that campus gives new opportunity for quiet separation combined with crossroads location.



LIBRARY PLAN







Photos: Marc Neuhof

Courts provide visual high spots, and very suitably because in building this size indoors appears as background and outdoors is special element. Library court, used also for communty affairs, is shown above; library is at bottom left. All courts are landscaped differently, all have plentiful seating. Classrooms (top left) have bilateral lighting with low windows on court "belonging" to room. Glass block was used to save heat, cut glare.

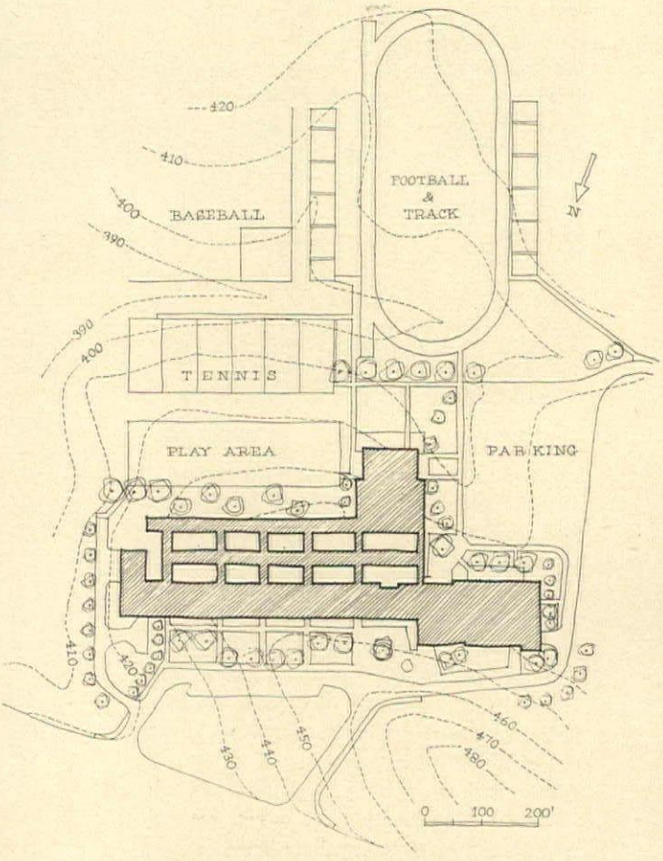
For the massive school, the building is a matrix; the main focal points move outdoors

NORTH ALLEGHENY JUNIOR-SENIOR HIGH SCHOOL, McCandless Township, Pa.
▲ 37 classrooms. ▲ 1250 students.

CONSTRUCTION: ▲ Foundations: reinforced concrete and block. ▲ Floors: homemaking, reinforced concrete slab; art and music, concrete on rib lath over steel joists; others, slab on grade. ▲ Light steel frame on 16′ module. ▲ Walls: auditorium, solid brick and block; gymnasium, corrugated asbestos and block; others, cavity brick and block. ▲ Most partitions: plastered cinder block; movable partitions in class conference rooms. ▲ Roofs: auditorium, precast concrete channel slabs on steel trusses; gym, metal decking on laminated arches; others, metal-bound T&G gypsum deck on steel joists. ▲ Steel sash. ▲ Flooring: asphalt and vinyl tile. ▲ Underwindow convectors (no trouble heating corridors).

COSTS: $1,928 500, including built-in equipment but excluding fees; $13.30 per sq. ft. Sitework and landscaping, $218,000 additional.

CREDITS. ▲ Architects: Mitchell & Ritchey. ▲ Structural engineer: R. A. Zern. ▲ Mechanical engineers: Dzubay & Bedsole. ▲ Electrical engineer: Carl J. Long. ▲ Landscape architects: Simonds & Simonds. ▲ General contractor: Brusca Bros., Inc.



Plan has central trunk corridor connecting all main elements. For expansion, transverse feeder corridors can be extended. Nine classrooms will soon be added to south; shops are being enlarged to south.



Two-level wing on slope gives landscaped yard (beyond parking) to cafeteria. School is nicely adjusted to hilly terrain. Corridor stepdown is more gradual than appears in foreshortened photo.

Auditorium avoids monolithic grimness, takes cognizance of other wings by means of pleasant glazed passage (see plan). Light is excluded by plastic draperies when movies or slides are shown.



EXCERPTS

Outside opinion
and comment
on the building industry
from the rostrum
and the press

Richard Meek—Life



Julius Shulman



Opinions expressed
in these excerpts
are not necessarily those
of the Forum's editors

Must an architect be a salesman?

Excerpts from a symposium of architects in the Bulletin *of the Southern California AIA Chapter*

Charles Luckman: No! He must be a good architect.

Having grown up in the business world, I have found it necessary to have only contact with the broad field of advertising. Among the things I learned was that no amount of advertising will sell a poor product. In contrast, I saw examples of high quality products being sold without any advertising whatsoever—and sold in substantial amounts. They sold because they were giving the public an inherently fine product; they were giving the public more for their money; they were conceived on the basic philosophy of fulfilling human needs.

I believe this applies to architects. There is no question but that the architect must possess a fine technical training. He must be well schooled in the ability to translate ideas into accurate working drawings. Above all, he must be willing to give his clients more and more service for their money. His finished project must fill the basic needs of the human beings who breathe life into inanimate brick and mortar.

There is one basic truism contained in those three words, "Form follows function": that is, if we architects function properly, the form—meaning the kind and size of our business—will follow. To me, functioning properly means the use of down-to-earth research analysis on the project assigned to us; a hard-headed and realistic solution; a businesslike method of handling our own work; keeping the project within the client's budget; a design solution with "built-in" architectural merit. This approach would indicate that architecture itself is neither a business nor an art, but a daily blending of the two. In brief, it should be the businesslike execution of the appropriate architectural concept.

Welton Becket: Salesmen rank their approach from high pressure to low pressure. Architectural salesmanship should be virtually no pressure. I think of it in terms of simply letting potential clients know we are available to render professional services if they desire them. We have our selling tools carefully prepared so we are ready to meet with the client should he want to interview us, visit our offices or tour our completed projects. We do not consider these meetings with clients as "selling" meetings. They are conferences where we explain the services we are prepared to render, show photographs of projects we have completed or which are in stages ranging from schematics to construction, discuss building costs and technical problems and answer any questions the client may have. We outline facts and offer ideas. We appear only at his invitation. In essence, we don't *sell*; we *offer* our professional services. The first is aggressive; the second is not.



George Vernon Russell: Intelligent planning and design must be augmented with an articulate presentation of our wares.

The reluctance of our universities to concede that words are important tools of the architect is beyond my understanding. As a result, we too often remain, collectively speaking, the community dolt, bewildered by the rush of our times. By no means should this be construed as blanket approbation of the recently developed "drummer," used in the old traveling salesman sense of the word—who, with little or no architectural qualifications, sells on fast assertions that are often not quite within 4% of being accurate. Perhaps how to keep some of our brash and eager beavers within the bounds of professional deportment might be a more timely question for discussion.



S. Kenneth Johnson: There are many tools in the salesman's kit. There are even specialized tools in the selling of architecture. Long white hair, a slouch hat, cape and the studied insult, if properly utilized, are great. It is peculiar that I don't recall what architect designed the Shamrock Hotel, but I automatically link the name of the Old Maestro with it because of his critique. Salesmanship? Wonderful!

As architects I believe that we should recognize that salesmanship is not only necessary to success, but is professional. Let it be taught in the architectural schools, parallel with design, for five years. If this were done we would not have to worry about the rightful place of our profession in the future economy.

Light and the law

Excerpts from an article by Frank H. Ellis in Standards, *magazine of the American Standards Assn.*

In Missouri, where it is a crime to maintain a common bawdyhouse within 100 yd. of a building "ordinarily used as a church," it is *not* a crime to maintain a theater in which no provision is made for emergency lighting. Yet hundreds of persons lost their lives in the "awful darkness" of the Iroquois Theater fire of 1903 because "emergency lights [were] missing." In Delaware it is against the law to employ a minor as a tightrope walker, but it is not against the law to crowd hundreds of children into a circus tent in which no provision is made for emergency lighting of the exitways. Yet it has been ten years since a municipal board of inquiry discovered that "an inadequate understanding of the powers and duties involved in the licensing and inspection of public gatherings" was a contributory cause of the Hartford, Conn., circus fire in which two thirds of the 653 dead and injured were children.

Even in states where matters closely related to emergency lighting are treated by law, emergency lighting itself has been ignored. Colorado, for example, has had a law since 1908 requiring adequate exits in places of public assembly "with proper and sufficent ways and passages leading to and from every such doorway," but no requirement has ever been made that these ways and passages be lighted in the event that a power failure should plunge the hall into darkness. The Delaware Health and Safety Code requires that public buildings should be equipped with fire escapes and outward-opening doors, but no law requires that light be supplied so that these doors may be reached and these fire escapes descended in case the building is blacked out in an emergency. In 1949 legislation was enacted in Missouri that exit lights in a place of public amusement "shall be on a circuit separate from the general house lights." But since this separate circuit was not required to be supplied from a separate source of energy, no real protection is afforded, despite the obvious intention of the law. Similarly, the requirements of the Virginia Fire Safety Regulation for emergency lighting in public buildings are completely nullified by the proviso that "this does not necessarily require a second source of electrical energy for the building."

Authoritative information on the subject of emergency lighting is available to state legislators in the so-called national building and safety codes. Many of these codes have already been enacted into law, but the great variance in the adequacy of their emergency lighting requirements demands that they be approached with some caution.

The National Electrical Code, which is a collection of rules for the "safeguarding of persons and of buildings and their contents from hazards arising from the use of electricity," does not in any sense of the word "require" emergency lighting.

The Building Exits Code states unequivocally that the demands of saftey to life require emergency lighting systems in four kinds of building: places of assembly (with certain exceptions), department stores (of a certain size), hotels (with accommodations for more than 100 persons) and hospitals.

As its title implies, the Building Exits Code, prepared by the Safety to Life Committee of the National Fire Protection

EMERGENCY LIGHTING REQUIREMENTS	STATE
ABOVE the minimal standards of the Building Exits Code and the National Electrical Code.	Pennsylvania
EQUAL TO the minimal standards of the Building Exits Code and the National Electrical Code.	Connecticut, Georgia, Illinois, Indiana, Kentucky, Louisiana, Massachusetts, Minnesota, New Hampshire, New York, North Dakota, Ohio, Oregon, Washington, Wisconsin.
BELOW the minimal standards of the Building Exits Code and the National Electrical Code.	Alabama, Arkansas, California, Idaho, Maine, Maryland, Michigan, Missouri, New Jersey*, Rhode Island*, South Dakota, Virginia, West Virginia.
NO REQUIREMENTS beyond those of the United States Public Health Service (or the equivalent).	Arizona, Colorado, Iowa, Kansas, Mississippi, Montana, Nevada, Oklahoma, South Carolina, Tennessee, Vermont, Wyoming.
NO REQUIREMENTS	Delaware, Florida, Nebraska, New Mexico, North Carolina, Texas, Utah*.

* *Requirements in process of revision*



Assn., contains requirements for the construction and arrangement of fire escapes, width of exitways, alarm systems and similar matters.

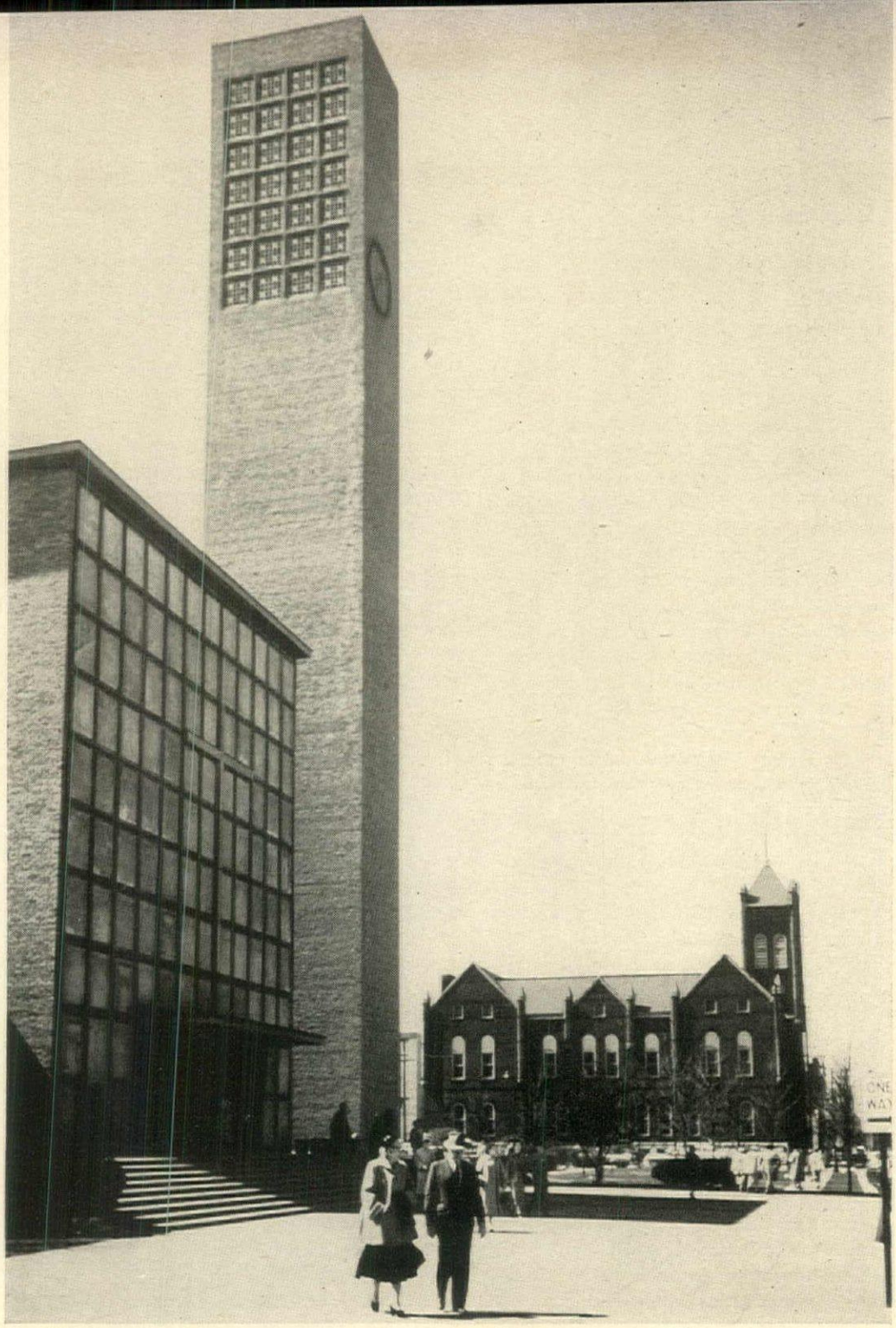
Adoption of the Building Exits Code by a governmental agency automatically makes emergency lighting "from a source independent of the general building lighting" a legal requirement in the occupancies listed in Sec. 1203 of the codes. Then, as a kind of extra dividend, Sec. 1203 also requires that all emergency lighting systems be installed according to the requirements of Article 700 of the National Electrical Code. Adoption of the Building Exits Code, therefore, entails legal enactment of Article 700 of the National Electrical Code.

Taken together, the Building Exits Code and the National Electrical Code afford minimum standards of saftey for coping with the hazard of sudden darkness in crowded or hazardous locations. The Building Exits Code tells *where* emergency lighting systems must be installed and the National Electrical Code tells *how* they are to be installed.

The minimum requirements prescribed by the Building Exits Code and the National Electrical Code also provide a standard for measuring the adequacy of existing state law concerning emergency lighting. On this basis, the requirements of only one state, Pennsylvania, exceed the bare minimum requirements. The Pennsylvania regulations, for example, stipulate not only what kinds of building, but even what locations within each kind, must be provided with emergency lighting. The National Electrical Code requires storage battery systems to be of sufficient capacity to maintain the total load of the emergency lighting circuit for one-half hour; the Pennsylvania regulations demand an hour and a half. Similarly, the National Electrical Code requires that generator systems be supplied "with suitable means for starting the prime mover on failure of

continued on p. 186

A conservative Midwestern town, faced with some typical building needs, shows what can happen when business leaders and architects roll up their sleeves: a church, a bank, a youth center, schools, factories, housing —all forward-looking architecture.

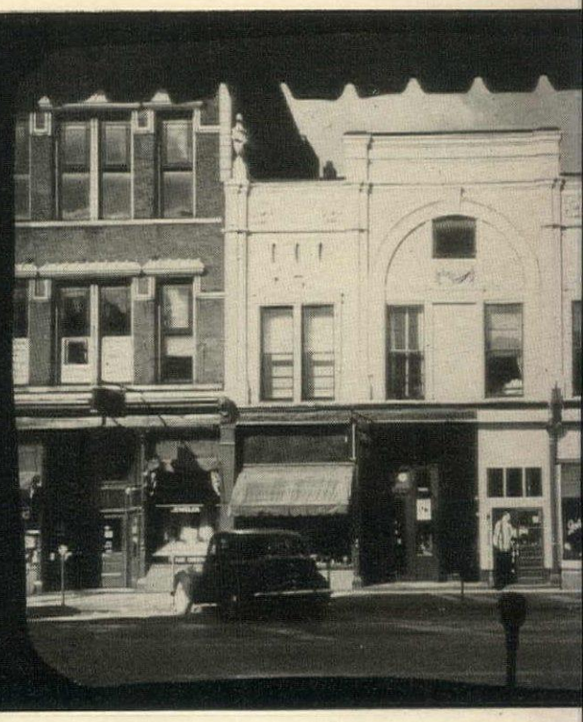


Saarinen's Christ Church in Columbus, Ind. was built 13 years ago; its gardens form a plaza opposite City Hall.
Some Columbians were cool at first. But strength and simplicity of design seem to have worn well





From the new bank, a glimpse of City Hall and the church tower



Picturesque old fronts are assets

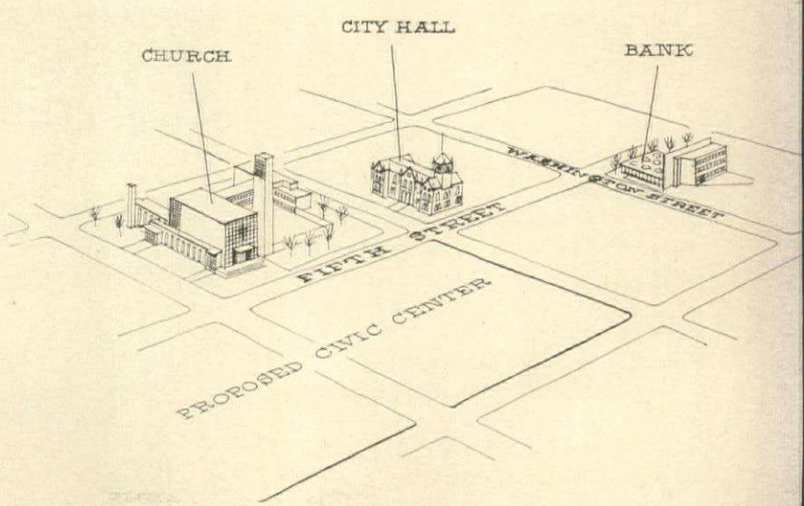
COLUMBUS, INDIANA . . . A STUDY IN SMALL-TOWN PROGRESS

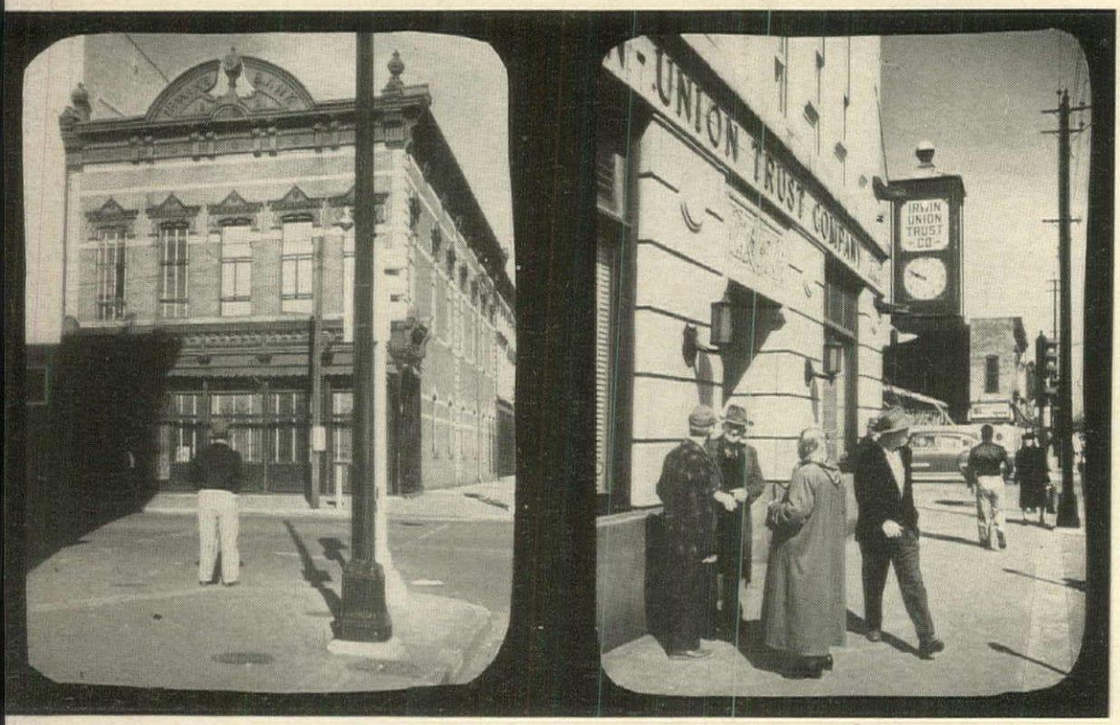
The mid-American community of Columbus, Ind. 42 mi. down the road from Indianapolis toward Louisville, might well be the envy of any small town in the US. Not only has it built to keep up with the problems of growing population (which has doubled to 22,000 since 1940), but it has built unusually well. Few towns of its size enjoy as much good new architecture, both downtown and in the suburbs (see p. 164).

The building that first put Columbus in the public eye—and gave its own citizens their first taste of modern design—was the famed Tabernacle Church of Christ (photos opposite), designed by the late Eliel Saarinen and given to the town in 1942 by Millionaire Banker William G. Irwin and other parishioners. Its taut strong campanile has become a symbol of Columbus' new unity and direction; its wide setback, sunken gardens and reflecting pool form a generous plaza where townspeople may pause during the business day or gather after Sunday services. Using this and the proud Victorian City Hall as anchors, the town's planning consultant, Lawrence Sheridan, suggests that Columbus could someday round out a full-scale civic center by adding an auditorium and library across the street.

Today, just a block away at the town's busiest intersection, another, quite different building is carrying on Columbus' old and new traditions. The low glass pavilion of the Irwin Union Bank & Trust Co. (shown on following pages) is also a building that belongs to its time and to the people of Columbus. Set back from the corner and ringed by greenery, it too opens up a public space at the city's heart and invites the passer-by to step inside. The client: a bank board headed by Irwin's nephew, J. Irwin Miller. The architect: Saarinen's son, Eero.

The big church and the little bank have set the pace for future improvements downtown. But as Columbus continues to refurbish and rebuild, it will continue to need good professional advice. To keep its character and continuity, it must preserve not only the high standard of its best new buildings, but the rich history of its best old ones.





Columbus history lives in the buildings of the Irwin family bank. The first was a dry-goods store where Irwin Miller's great grandfather, Joseph Irwin, kept the "safest safe in town." A lot of people who stopped in to buy or chat asked if they could leave their money with him, and before long Joe Irwin was in the banking business, too. In 1881 Irwin's bank moved out of the store and into a splendid new building (above, left). By 1925 it had merged with another local bank, occupied an imposing edifice in neoclassic style (above, right).

IRWIN UNION BANK & TRUST CO.
ARCHITECTS: Eero Saarinen & Associates
STRUCTURAL ENGINEERS: Severud-Elstad-Kreuger
MECHANICAL, ELECTRICAL ENGINEERS: Hyde & Bobbio
ACOUSTICAL CONSULTANTS: Bolt, Beranek & Newman
LIGHTING CONSULTANT: Stanley McCandless
GENERAL CONTRACTOR: J. L. Simmons Co.

Now, a pavilion in a park: a gift to the city, an invitation to bank

The bank's newest home, on a corner right across from the last one, sums up some striking changes in the art of banking. The vault is still secure, in the basement, but the proud impregnable façade has become a bright, open pavilion, kept lower than its neighbors and opening up a little square where the town most needs light, greenery, and change of pace. Voluntary setbacks on all sides, lined with trees and plant beds, invite pedestrian traffic to leave the mainstream and pay a leisurely visit. As the trees grow, they should help soften and obscure the bank and its plain brick backdrops, strengthening the impression of a park (and taking any "fishbowl" feeling away from private transactions). The bank's directors proved themselves not only good citizens, but good businessmen too: the new bank, in virtually the same location as the old, is gaining new customers almost four times as fast.





Photos: (above & bot. opp. p.) Hedrich-Blessing

Glass walls are shielded by trees and 4′-6″ roof overhang. (Domes are not skylights—see photo, this page.) Brick wall acting as backdrop at left was refinished by next-door store owner.

Nine opaque domes of shell concrete break up the flat slab of the 11′-6″ ceiling and act as giant lamp shades for suspended fixtures. Lined with acoustical plaster, they help deaden noise from hard surfaces.

Special services area: filing cabinets form one wall of "island," left

One big banking room: elegant yet informal as the old country store



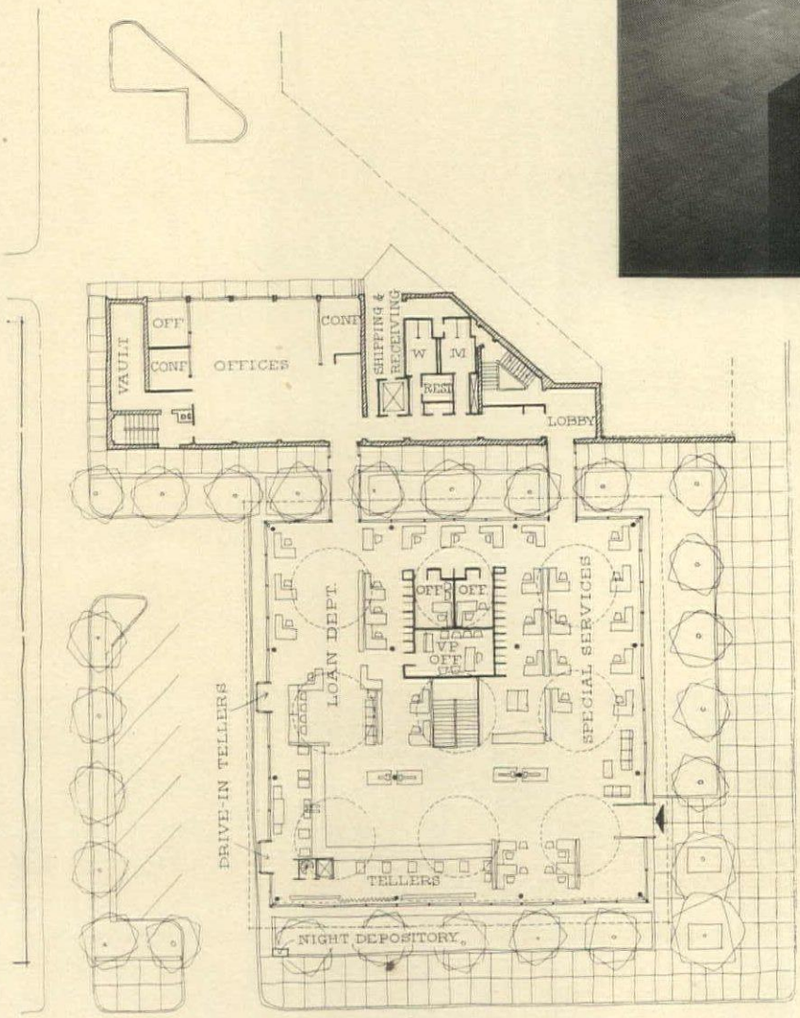
Drive-in tellers face a roadway and small parking lot at the rear. At right, near sidewalk, is night depository.

Years ago Columbus townsfolk made some good-natured cracks about their new church (e.g., "When are you going to move in the machine tools?"). There have been questions about the new bank, too: Why erect a one-story building on such valuable corner property? Would the public do business where everyone could see in? Would the factory worker, the ditch digger and the farmer walk in wearing work clothes? Some still look at the nine domes and refer to it as the "brassière factory," but most of the other doubts have been well answered. Miller hoped the bank could recapture some of the atmosphere of the old country store it was born in: a friendly, unhurried place where everyone would feel at home, in overalls or not. Saarinen's office agreed, and felt, too, that a new building should not clash in scale or break the continuity of the fine old Victorian fronts along the main street. To keep the corner open, the architect placed some of the bank's less public departments in the basement, others in a three-story office building to one side (plans opposite). Within the low pavilion, tellers are accessible at open counters in the front. Loans and special services are made more private toward the back. Executive office and conference rooms are in an island convenient to all departments. Bank cost $690,000, or $22 per sq. ft.

Open counters for tellers have gay, varied fronts. Plastic hoods can be removed to provide windows needed as volume of day's business fluctuates. Tellers are connected with cash vault below by small elevator and spiral stair, with accounting department in office building by pneumatic tube.

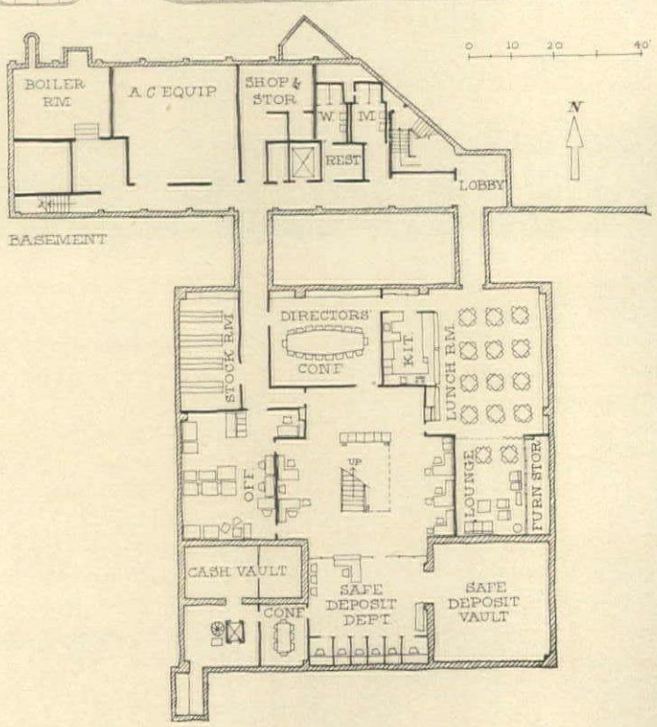


Photos: Hedrich Blessing



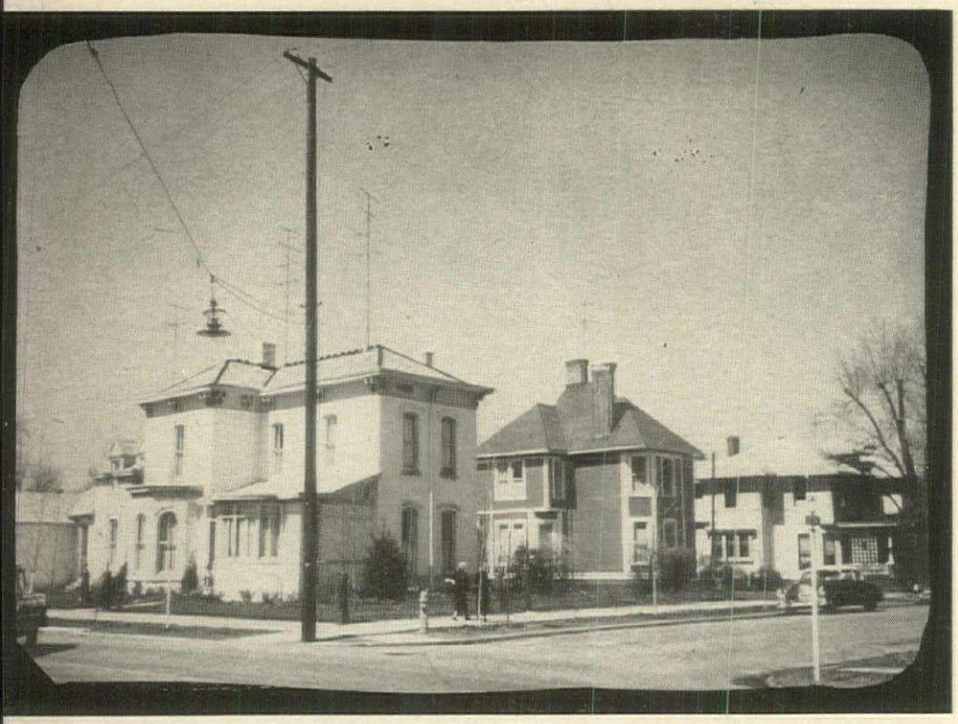


Glass passageways link pavilion with investment trust department in adjacent building.



Center stair leads to safe-deposit vault and coupon booths in basement.

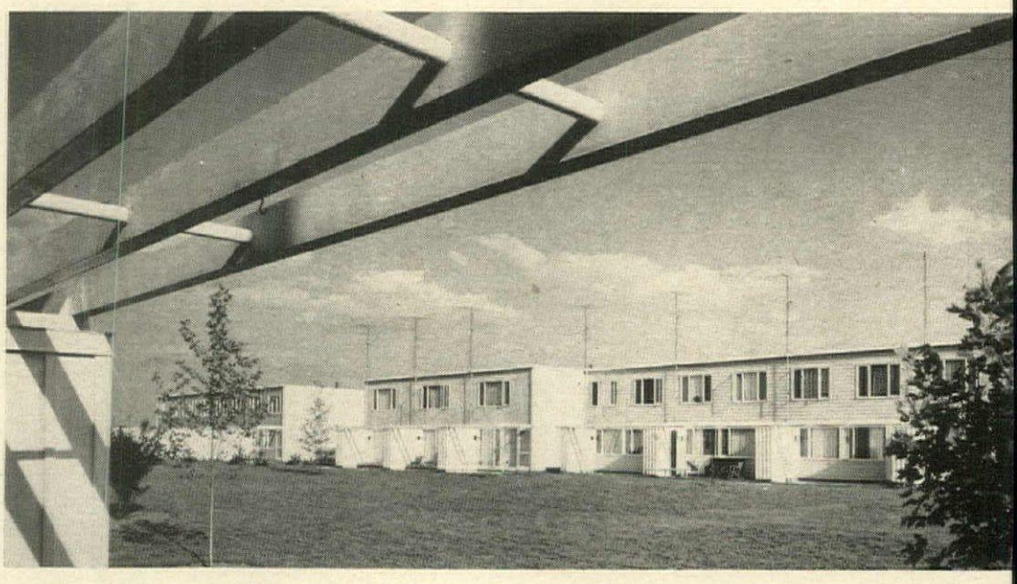




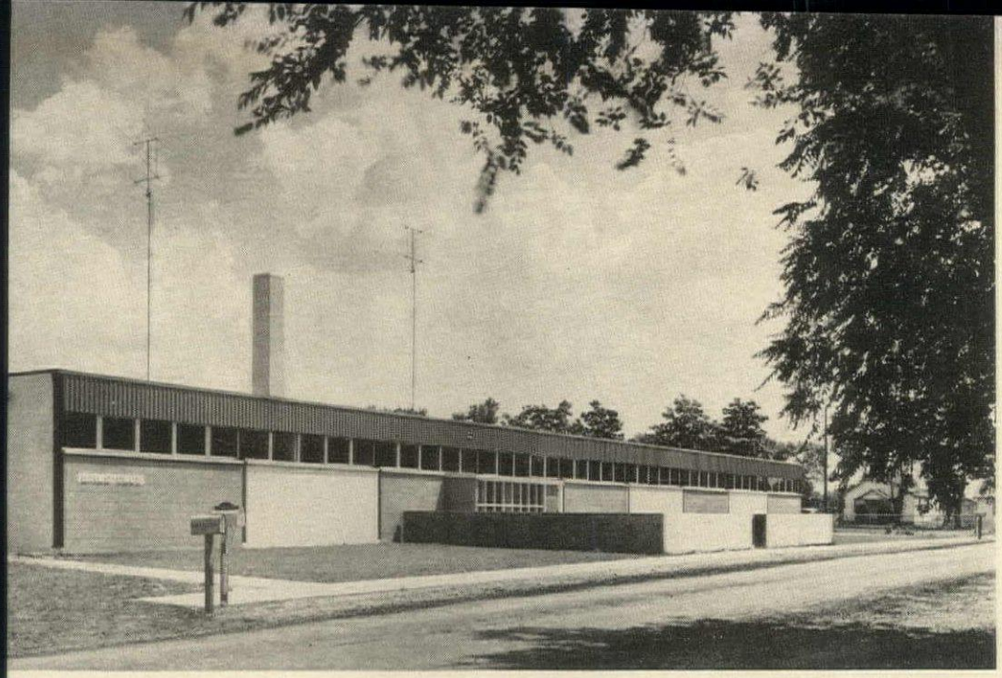
Gracious old homes were not enough to meet new demands

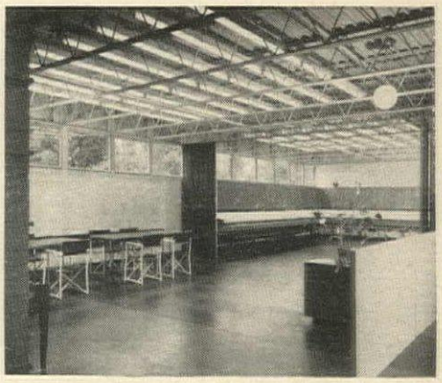
An up-to-date look spreads through Columbus suburbs, too

Since World War II, Columbus has met, and licked, most of the problems that face expanding communities everywhere—without asking for outside money. Back in 1946 industrial leaders decided it was up to them to assume responsibility for the community in which they prospered, and through Chamber of Commerce planning committees set about mapping a ten-year improvement program. First they fought for an extra $1 property tax for a cumulative school-building fund, and, when they found the money would be too long coming in, put up $400,000 from corporate tills to build the first of several schools. Next they launched a drive for a new high school gym by donating $425,000 through business organizations, and inside of two weeks had swelled the total to nearly a million dollars by payroll deductions and house-to-house canvassing. Planners were invited in to improve zoning, traffic, parking, playgrounds, and the city voted bond issues for new water and sewage plants. A housing committee asked Architect Harry Weese down from Chicago to design badly needed rental housing, and businessmen persuaded a local contractor to take over the project by contributing $54,000 to the city for streets and utilities. (This also gives them a continuing voice in keeping up its condition.) Fifty-four units of Columbus Village are now built and occupied (photos right). Columbus has a surprising number of modern homes as well.





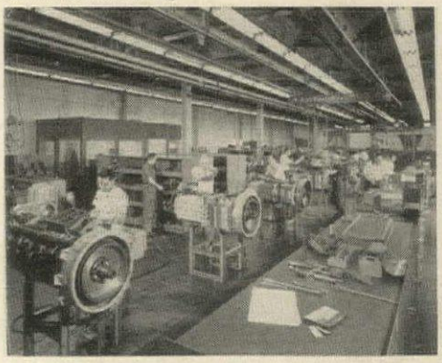




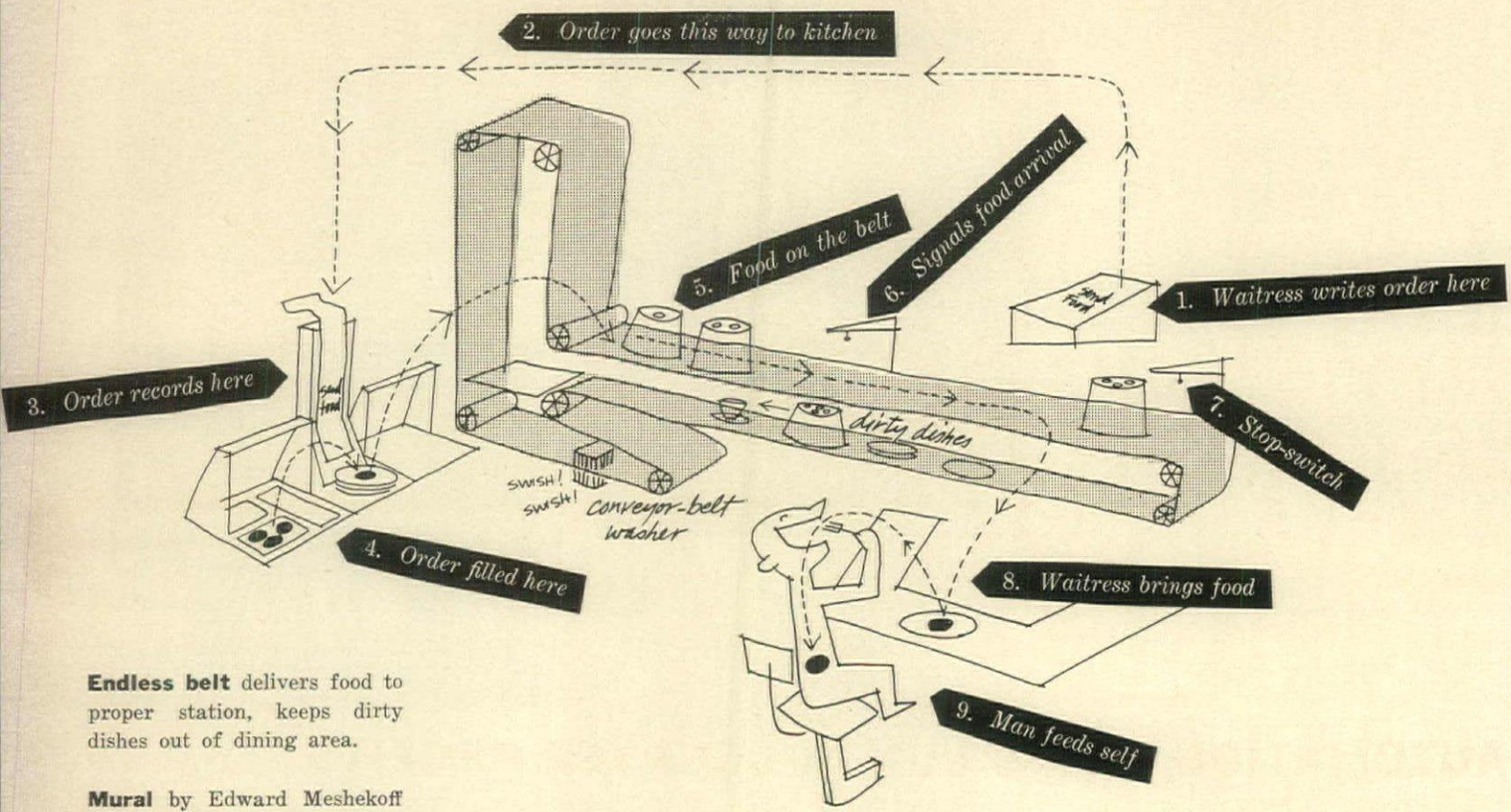
Youth Club, in an underprivileged section of recently annexed East Columbus, was also designed by Harry Weese. Head of the building committee was George Newlin of the Union Starch Co., a local industry. Club, divided into boys' and girls' wings, is part of the town's lively "Foundation for Youth" program, which also includes Boy Scouts, Girl Scouts, Cubs and Brownies, a Youth Camp and a "Jive Kennel" which keeps kids out of side-street trouble. Columbus now has almost no juvenile delinquency problem.

Diesel factory for Cummins Engine Co., one of Columbus' two biggest industries, is another Weese design, along with interior colors, dealers' showrooms, company trademark, even the color scheme for the company racing car. Plant, only seven blocks from center of town, is quiet, well-enough designed and planted (by Landscape Architect Dan Kiley) to be a good neighbor to adjacent residential and commercial areas. Cummins and other nearby industries also donated a by-pass highway to keep their employee traffic from clogging town streets.

Photos: Hedrich-Blessing







Endless belt delivers food to proper station, keeps dirty dishes out of dining area.

Mural by Edward Meshekoff attracts customers to far end of belt, which is concealed behind mural screen.

Photos: © Ezra Stoller



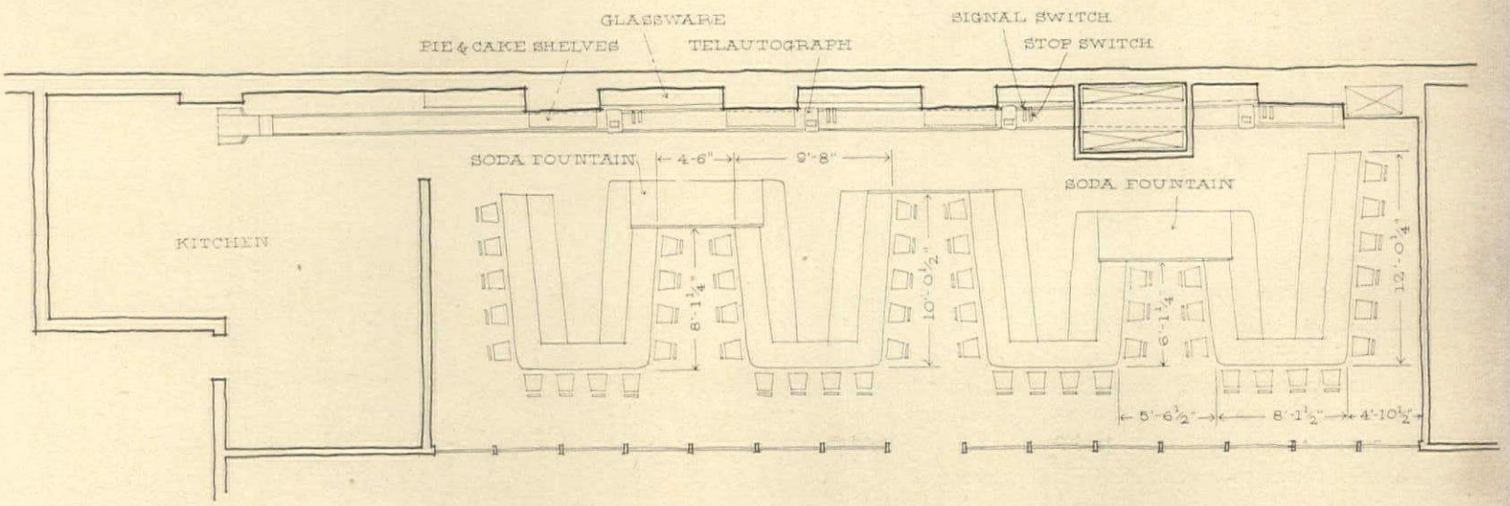


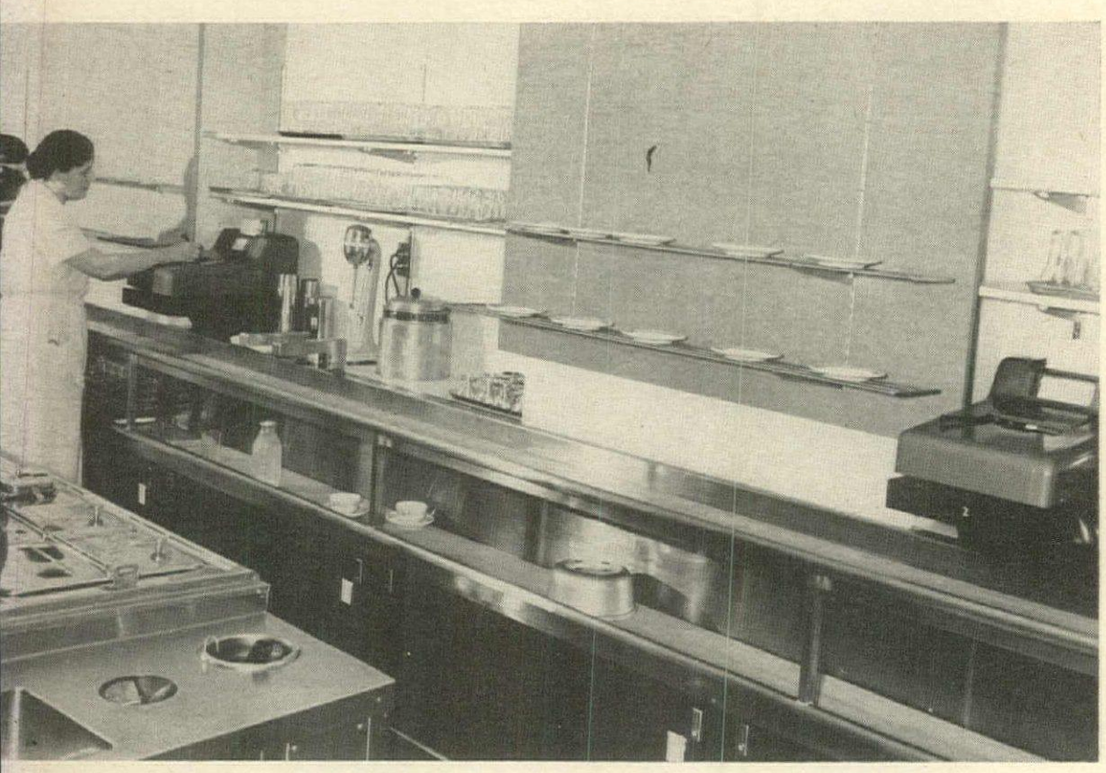
Glass wall opens fountain shop to store's new rug department. Cashier is at left.

AUTOMATION FEEDS LUNCH-COUNTER PROFITS

Here is good news for the quick luncher, that hardy citizen who has suffered from slow, noisy service ever since soda fountains and snack bars began. And for his host, who usually likes to make maximum use of every seat. The electronic-ordering, automatic-delivery system in Hutzler's new department store fountain cuts kitchen-to-customer time to a quick, quiet minimum: 2 minutes for hot foods, 3 minutes for sandwiches, 4 minutes for salads. Fifty-one counter seats each serve 12 people a day, twice as many per seat as in the old restaurant, which seated 118 at tables (total kitchen-dining space was reduced from 2,600 to 1,900 sq. ft.). There are now 14 employees (seven full time, seven part time) compared with 21 (five full time, 16 part time), and the mechanical aids help them work at a steadier, more efficient pace. Coupled with good food and bright, pleasant surroundings, the fountain's magic carpet has also helped boost business in the remodeled rug department, which it faces through full glass walls.

Instead of having to shout an order and then remember to pick it up when ready, a waitress at any one of the four U-shaped stations simply turns around and writes it on a pad. As she is setting or clearing places, pouring coffee or making a milkshake at the adjoining fountain, a red light blinks and she turns again to pick up the filled order. To see how it works in detail, turn the page.

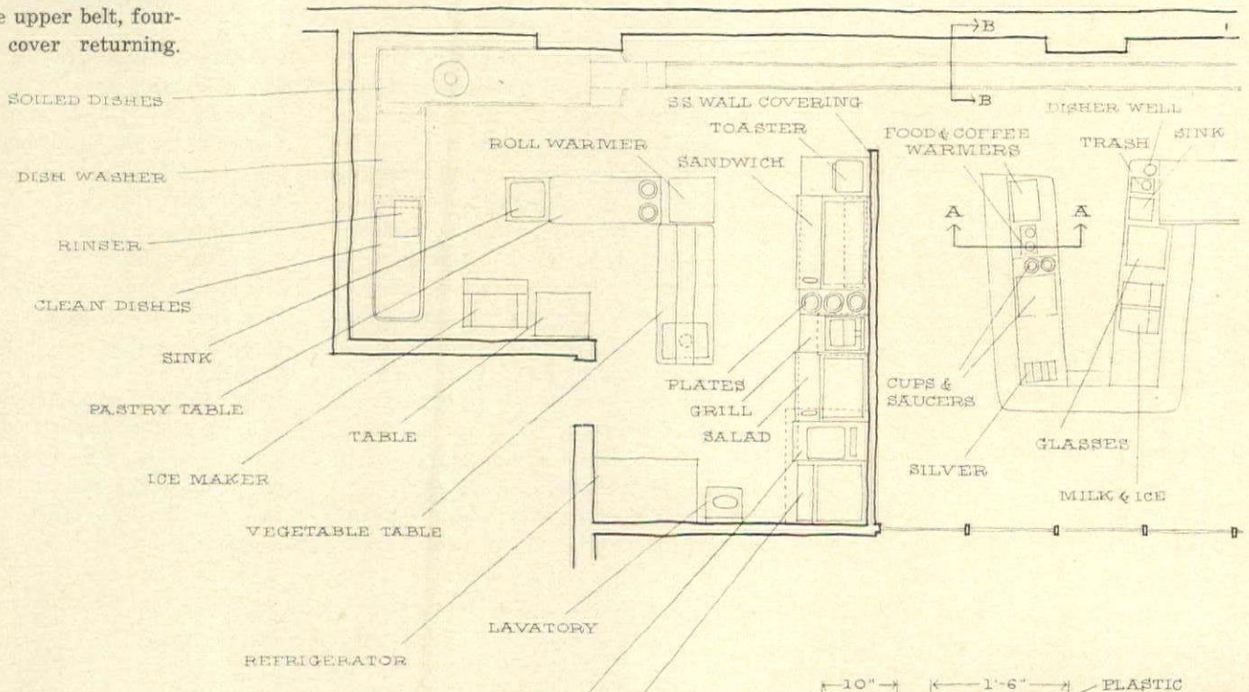


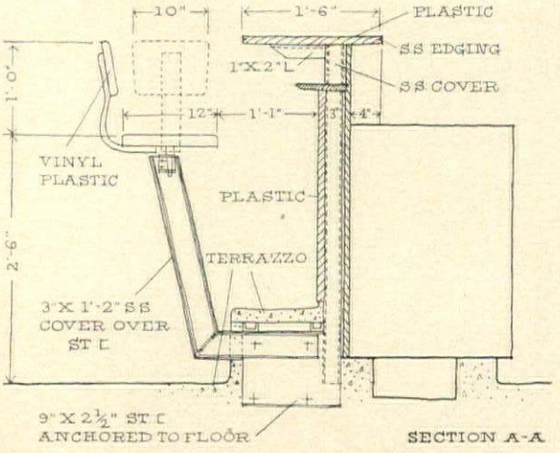


1. Waitress writes order on Tel-Autograph pad opposite her station. Note switch arms extending above upper belt, four-holed plate cover returning.



2. Order, transmitted by wire, appears simultaneously on roll of paper in kitchen. Grille below is for hot snacks; full hot meals are elevatored up from another cafeteria kitchen.





FOUNTAIN SHOP, HUTZLER BROTHERS CO., Baltimore, Md.
ARCHITECTS: Office of James R. Edmunds Jr. and Ketchum, Gina & Sharp
STRUCTURAL ENGINEERS: Crout, Snyder & Crandall
MECHANICAL, ELECTRICAL ENGINEERS: Henry Adams, Inc.
KITCHEN CONSULTANT: F. A. Davis
GENERAL CONTRACTOR: Consolidated Engineering Co.

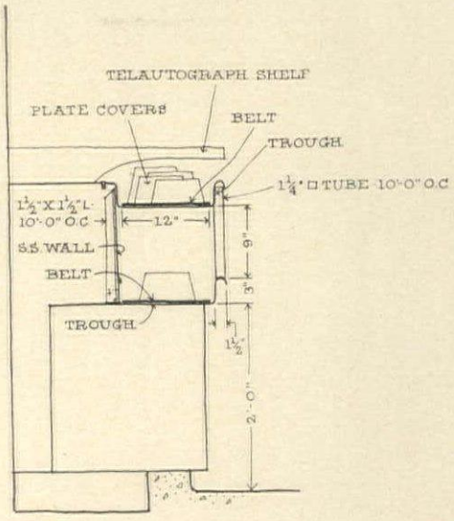


3. Food is prepared directly below order receiver (seen at right), covered with special plate cover and placed on top half of belt (background).

© Ezra Stoller



4. Covered plate moves out on belt, which rides in watertight trough. Aluminum hoods, stacked in wells above, are of four different heights, identified by one to four holes in top. A No. 3 hood, for example, passes under extending switch arms until it enters station No. 3, where it contacts switch that sets red light flashing. If not removed, hood proceeds to end of station. Here it strikes a second switch, stopping belt until removed.



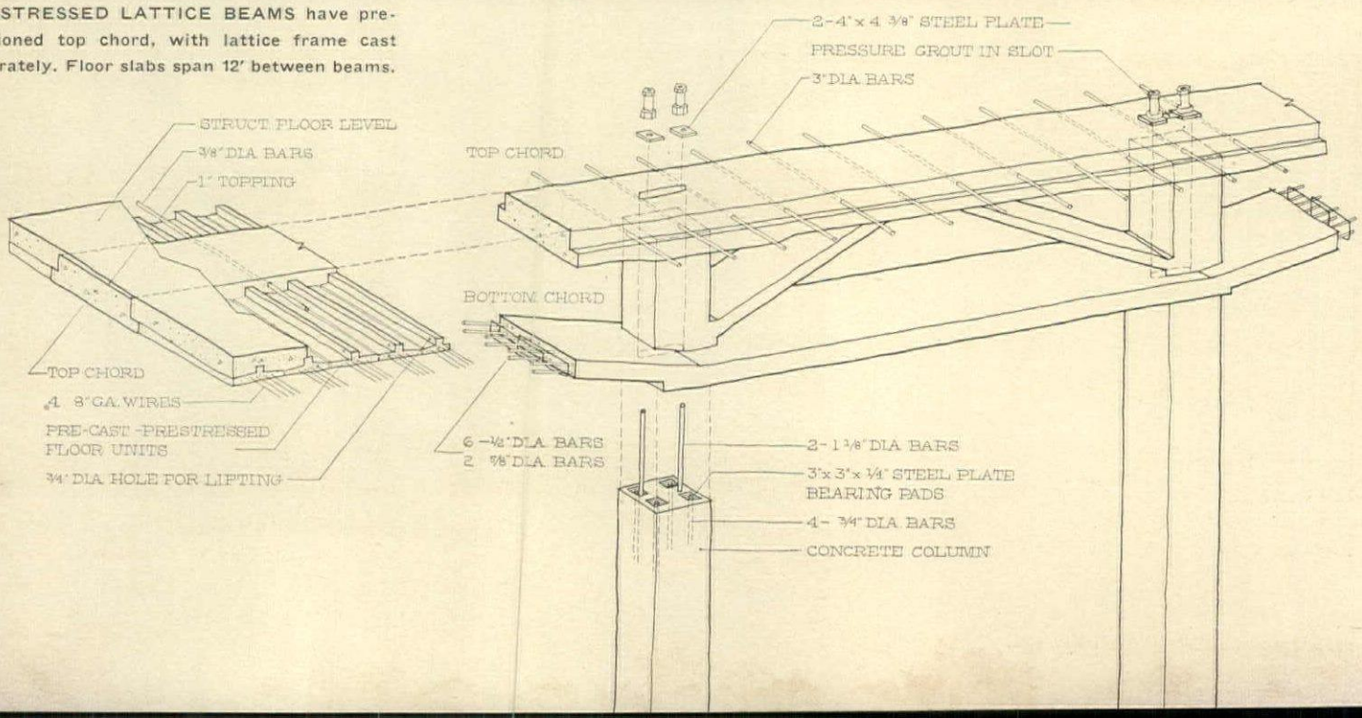
SECTION B-B

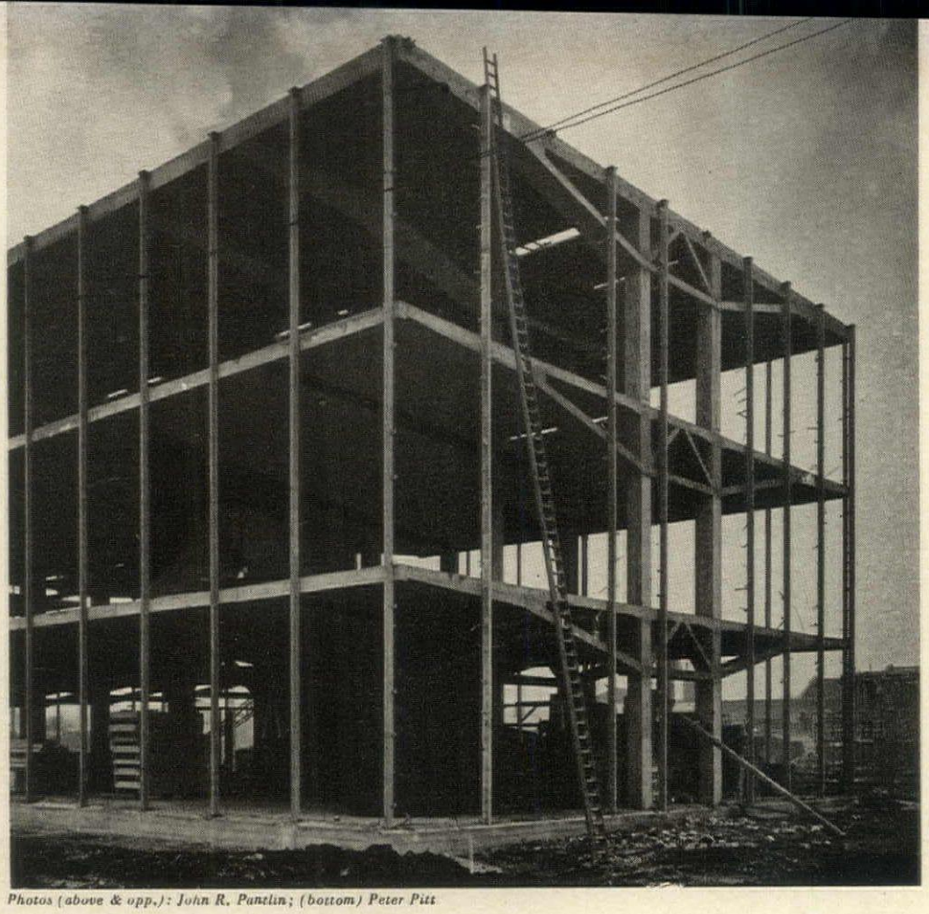
BUILDING ENGINEERING

1. *Precast concrete for cantilevered construction*
2. *Tapered contilevered slabs for daylight at low cost*
3. *Heat-reflecting glass blocks for cooler classrooms*
4. *Full-scale test building for better offices*
5. *Stainless steel for more durable curtain walls*

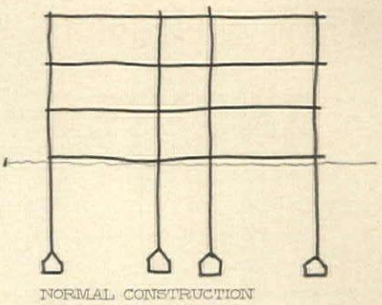


PRESTRESSED LATTICE BEAMS have pre-tensioned top chord, with lattice frame cast separately. Floor slabs span 12′ between beams.

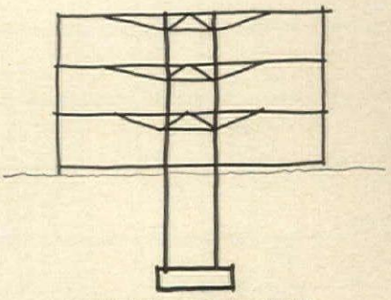




Photos (above & opp.): John R. Pantlin; (bottom) Peter Pitt



NORMAL CONSTRUCTION



CANTILEVER CONSTRUCTION

1. PRECAST CANTILEVERED FRAMES

Precast prestressed lattice beams cantilevered 22′ speed erection and simplify foundations

Because of poor subsoil conditions, the 54′ main beams of this three-story school in England are cantilevered out 22½′ on either side of a pair of supporting columns. By thus concentrating loads along a narrow central strip, the double cantilevered design halved the number of columns required, with considerable savings in foundation costs. It also allows maximum light penetration since the beams taper to only 7″ at the edges and carry a light glass curtain wall.

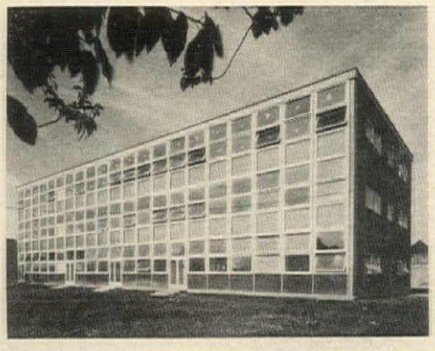
The structure is framed with two lines of cast-in-place concrete columns 9′-3″ apart along the spine of the building. They support precast, prestressed double-cantilevered frames spanning the full 54′ width of the building at each floor. These in turn carry a composite 4″-thick floor of pretensioned concrete joists topped with poured concrete which helps tie the precast members together. A light timber framed curtain wall is carried by 36′-long, 4½″ x 3″ prestressed concrete mullions which are suspended 6′ o.c. from the roof.

Construction sequence. The precast concrete structure was erected with the speed of a steel-framed building. After the first-floor columns were cast, the nine-ton precast lattice beams were erected directly from the delivery trucks, taking less than half an hour for each beam. They were bolted to the supporting columns, then braced with precast edge beams bolted between the ends of the frames. The only formwork required was at the 7′-10½″ high central columns.

Framing tolerances are taken up by steel shims, used atop the columns and at the edge beams. With all the precast members involved in the building, close tolerances were demanded and achieved; the building gained only ¼″ in a length of 126′ and lost only ⅛″ on a width of 55′.

Because of their high 1/r ratio (36′ long for a section of 4½″ x 3″) the prestressed concrete mullions are insufficiently rigid to be handled without additional support, consequently they had to be braced with a steel erection frame. The mullions went up at a rate of 22 a day.

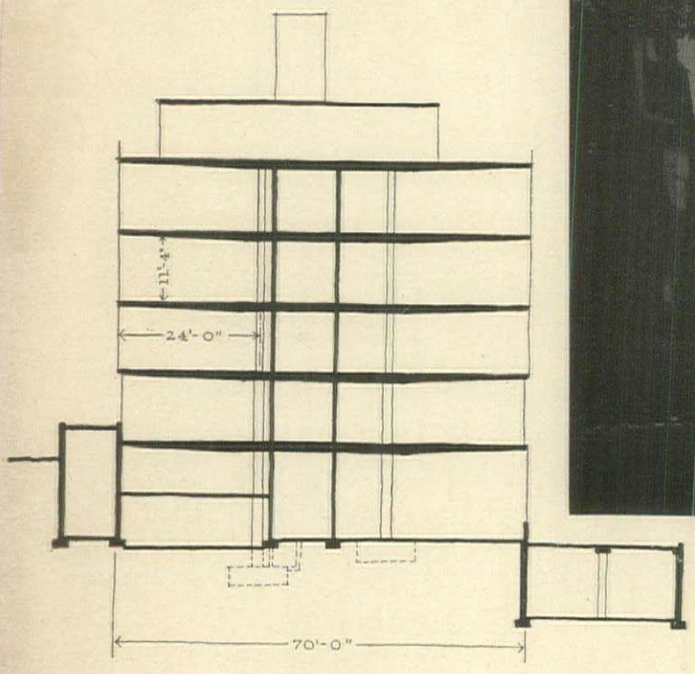
A 450-pupil addition to the Staveley Road School in Chiswich, England, the building was designed by Stillman & Eastwick-Field, architects, and F. J. Samuely, structural engineer.



DOUBLE-GLAZED CURTAIN WALL is carried on 36′-long prestressed mullions, 6′ o.c.

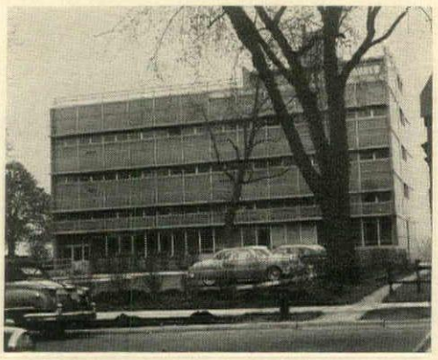


COLUMN-FREE window walls, 10′-10″ high, admit light to back of classroom.



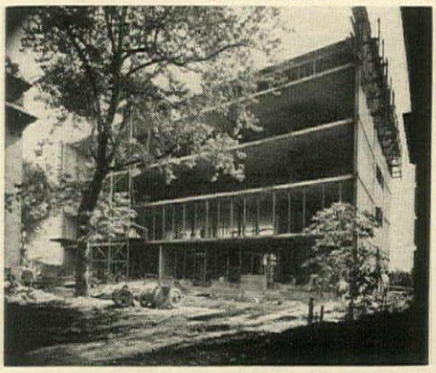


CANTILEVERED FLOORS are expressed with offsets on the solid concrete end walls.



ALL-GLASS WALLS on sides of school are of glass block above vision strips.

Brown & Rehbaum Service Inc.



SLAB EDGES ARE CAMBERED upward until set to allow for curing deflections.

COLUMN-FREE WINDOW WALLS give good, shadowfree light to open interiors of building.



2. DOUBLE-CANTILEVERED FLOORS

Multistory concrete construction is poured in place at a structural cost of $4.70 per sq. ft.

To provide as much light as possible in the classrooms of Milwaukee's Layton School of Art, the floors of the building were cantilevered out 24′ on either side of a double row of columns. This permitted the glass block walls to be completely free of columns. Further, although the double-cantilevered design meant extra care and expense in the construction of formwork, this was more than offset by the savings in foundation costs achieved through concentrating the supporting columns at the core of the building. The structural cost of the four-story, 106′ x 70′ building was $201,850, or $4.70 per sq. ft. including floor slabs, end walls and foundations.

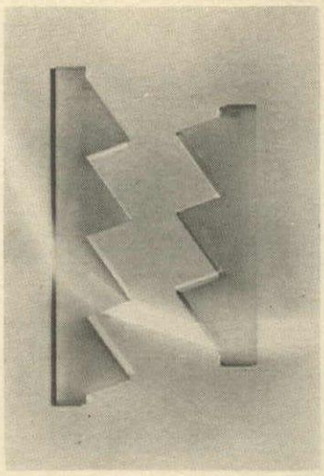
The floor slabs are 16″ thick for a width of 27″ in the center portion and taper to 8″ at the edges of the cantilevers. Part of the roof slab is sloped upward from the column lines to add 5′-4″ to the height of the glass wall. Longitudinal reinforcement was designed on the basis of a 16″ deep beam 5′ wide along each column line. Columns are 17′-4″ o.c. and 20″ in diameter at the ground floor. However, column diameters are reduced 2″ per floor to 14″ at the top floor.

The long walls, built of glass block with a clear glass vision strip, rest on the outer edge of the cantilevered slabs. The end walls are of 13″-thick solid concrete, with exterior surface offsets to express the structural frame of the building.

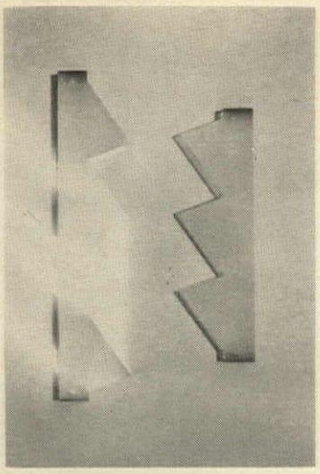
Calculations showed that the 24′ cantilevers would deflect 3½″ under the dead weight of the floor and the superimposed wall loads, but that the deflection would be zero at the two end walls. To avoid nonuniform deflection the forms for the slabs were cambered upward from the column lines and the end walls to a 3½″ high spot at the midpoint of each cantilevered edge. Before formwork was removed the edges of each slab were jacked up tightly by screw jacks 18′ o.c. After the structure was completed, these jacks were released simultaneously on each slab starting at the roof, allowing each slab in turn to deflect to its intended position.

All interior walls are either exposed concrete (cast with fibrous board formwork) or unpainted concrete block. Interior partitions are kept to a minimum to allow flexible layouts. All concrete was placed by an 8″ double-piston concrete pump handling 50 cu. yd. of concrete per hour.

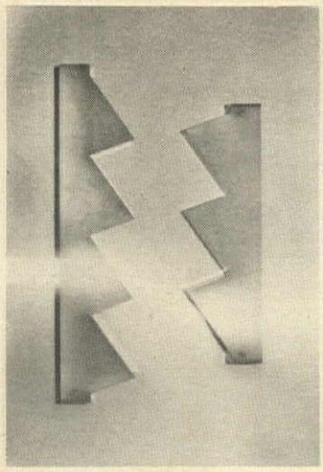
Total cost of the building came to about $530,000, or $12.30 per sq. ft., including equipment. Architect, Myles E. Belongia; structural engineer, V. K. Boynton; general contractor, Siesel Construction Co.



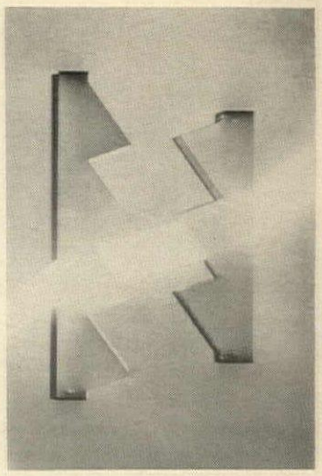
HIGH ANGLE SUNLIGHT above 60° passes through into room.



45° SUNLIGHT bounces back to sky, reducing glare and heat.

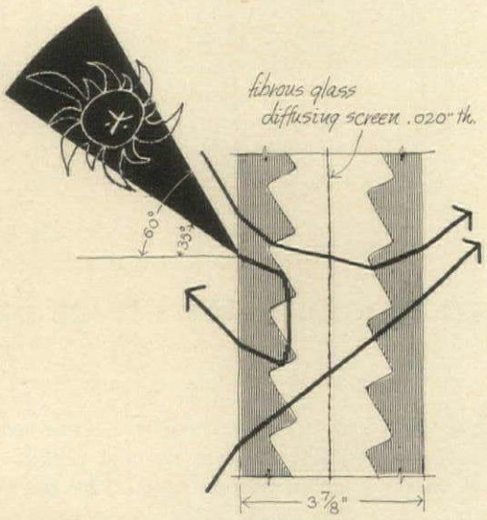


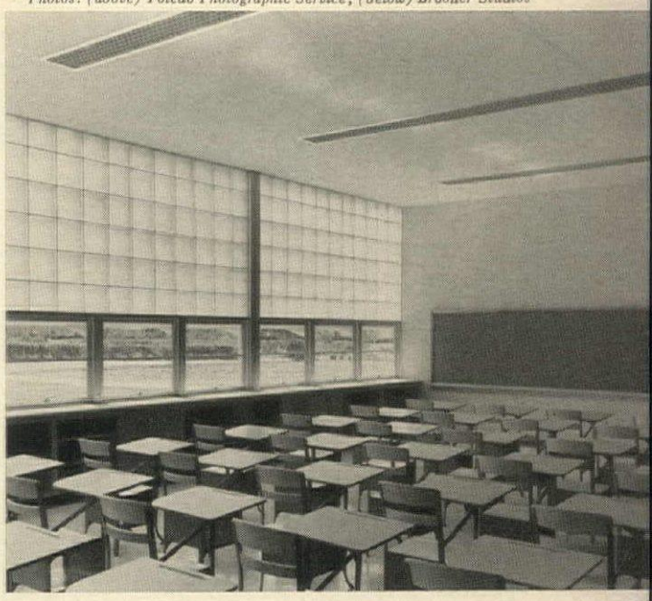
HORIZONTAL SUNLIGHT below 35° is diffused through block.



GROUND-REFLECTED LIGHT passes through to ceilings.

Photos: (above) Toledo Photographic Service; (below) Brooner Studios





HEAT-REFLECTING GLASS BLOCKS at Incarnate Word Academy, Corpus Christi, give good light with low brightness. Architect: Wade, Gibson & Martin.

3. GLARE CONTROL WITH GLASS BLOCK

Light directing units admit winter warmth but reject heat and glare of 45° summer sun

Standard directional glass blocks are designed to direct all available light up to the ceiling where it is directed down to the back of a room. While these blocks work most effectively in many areas, they have two drawbacks: 1) in the southern states when the sun is brightest, the blocks may transmit glaring light and troublesome heat, notably on the south exposure in spring and fall and on the east and west exposures in summer when the sun is at an altitude of about 45°; and 2) they do not transmit much of the ground-reflected light that could help illuminate a room on dark days in winter.

These difficulties have been overcome by a new type of light control block that has been successfully used in classroom walls as far apart as Detroit and Corpus Christi, Tex. Used above standard vision strips, in both schools the new block has proved effective in three ways:

- It bounces back the heat and light rays from a 45°-high sun by means of carefully angled horizontal prisms on the inner control face of the outer glass (see diagram—the two external faces are cut with vertical prisms to direct light into the room while the inside face of the inner glass is cut with horizontal prisms angled to direct light upward to the ceiling of the room).
- It accepts a gradually increasing amount of heat and light above and below the 45° band (from 35° to 60°) and almost all of the "cool" ground light.
- It diffuses light rays as they pass through the block by means of an optional 0.020"-thick fibrous glass screen set between the two halves of each block.

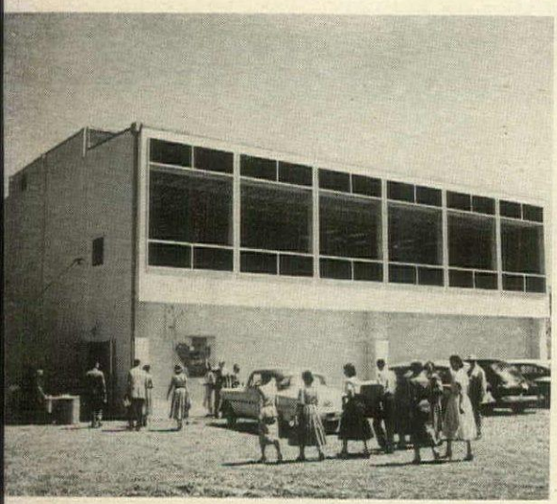
In performance tests the new light control block is less than half as bright as a standard directional block, showing only 1,400 lumens per sq. ft. vs. 2,800 for the standard block at noon on a southern exposure, yet it transmits 80 to 85% as much light. In a direct temperature-rise test of the heat transmitted for a given period of time, the temperature on the inside face of the new block rose 20° from 74° to 94°, while that of the standard block rose 32° from 74° to 106°.

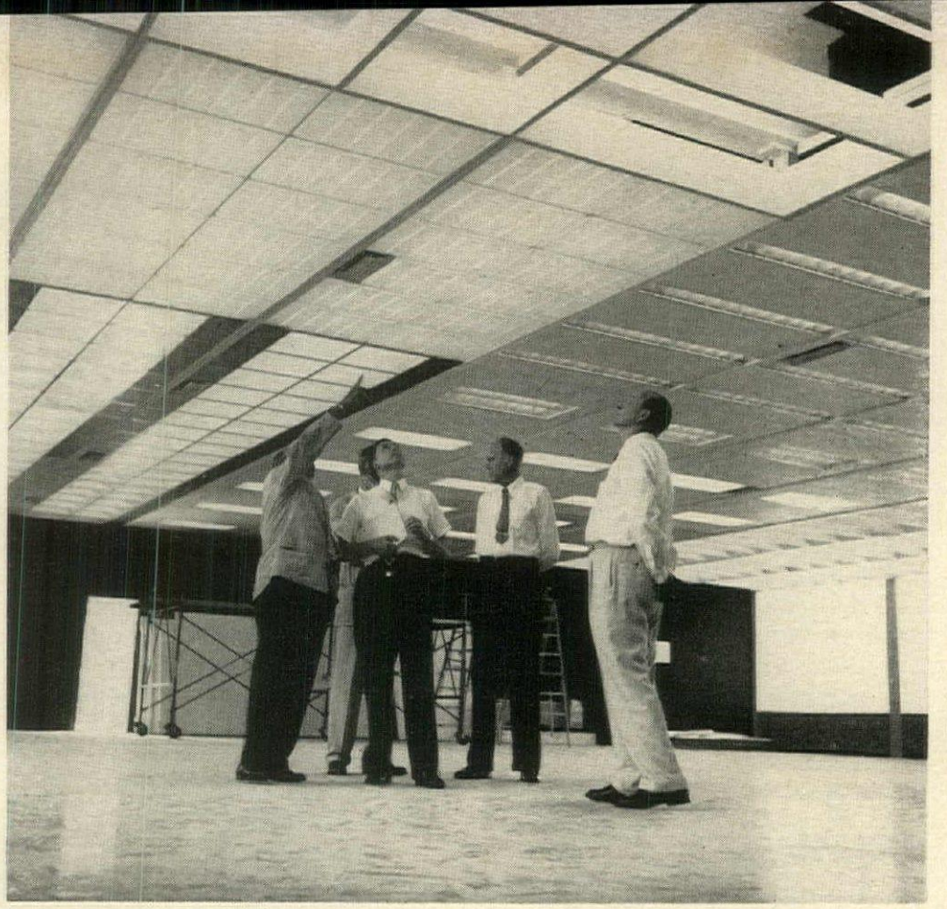
Developed by Dr. R. A. Boyd at the Daylighting Laboratory of the University of Michigan for the Kimble Glass Co., the light control block is manufactured in units 11¾" and 7¾" square, each marked with a gold stripe showing its position of laying. It weighs 16 lb. per sq. ft. and has a U-value of 0.48 for the 7¾" block and 0.44 for the 11¾" block. Costs: $3 to $3.50 per sq. ft. in place.

© Ezra Stoller



RURAL INSURANCE PLANT, shown in model above, will contain 500,000 sq. ft. of office space. Below, mockup of typical section.





SIX CEILING SYSTEMS in mockup are tested for lighting, acoustics, and construction and maintenance costs.

4. FULL SIZE MOCKUP AIDS OFFICE DESIGN

Test building used to try out lighting, acoustics, sunshading, office layouts, partitions and finishes

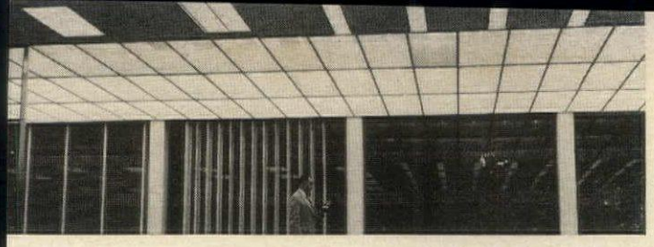
Alongside the foundations for its new $10 million, 500,000 sq. ft. office building at Bloomfield, Conn., the Connecticut General Life Insurance Co. has spent about $100,000 or more on a two-story 60′ x 72′ building that will be torn down within a year. This building, a full size mockup of a typical office section, is used by the insurance company and its architects and engineers to examine alternative ceiling constructions, lighting systems, sunshading devices, office layouts, partition systems and finish materials while their main building plans are still on the drawing boards. And they confidently expect that their $100,000 investment (about ½ of 1% of total building cost) will be returned to them threefold—in lower construction and finishing costs, in lower maintenance charges and in considerably more pleasant working conditions in the new building.

The use of full size mockups is not new, but this is perhaps the most comprehensive one built to date. The architects, Skidmore, Owings & Merrill, found mockups useful in designing the Bellevue Medical Center, New York, in 1948, the Terrace Plaza hotel, Cincinnati, in 1949, and the Ford Central office building now under construction in Dearborn, Mich. In each case the cost of the mockup was justified because 1) it gave the architects and engineers a chance to compare alternative solutions and to make those minor improvements that can save thousands of dollars in installation man-hours; and 2) the owners can see exactly what they are getting for their money without the difficulty of deciphering blueprints which their inexperienced eyes cannot always follow. Such practical research is specially important for an insurance company, which earns only 3% to 4% on invested capital. The company's offices are its productive plant and must provide working conditions which will remain more than adequate for at least 40 years while having the lowest possible long-term maintenance costs.

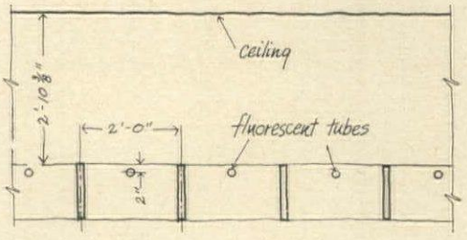
Since it was built last June, the mockup has been the daily meeting place of the owner's building committee members, building material manufacturers, mechanical, lighting and acoustic engineers, architects and field engineers, who together have made a number of valuable contributions to the new building.

Ceiling construction. After testing variations of three types of ceilings, an open baffled ceiling, designed by the architects, was selected. It has vertical sound absorbing baffles 2′ and 6′ o.c. each way beneath exposed fluorescent tubes. (The other ceilings tested included two types of translucent plastic ceilings, and two types of ceiling with troffered lighting set in acoustic tile ceilings.) Advantages: the open ceiling provides the most light (55 foot-candles maintained) with the least glare and its high brightness blends well with the sky brightness outside the building. It also has a good noise reduction coefficient of 70% to 80% and its openness, with air diffusers and sprinklers exposed above it, gives a welcome feeling of height. It is easy to get at for maintenance and, at an estimated $3.45 per sq. ft., it costs 40¢ less than the cheapest alternate.

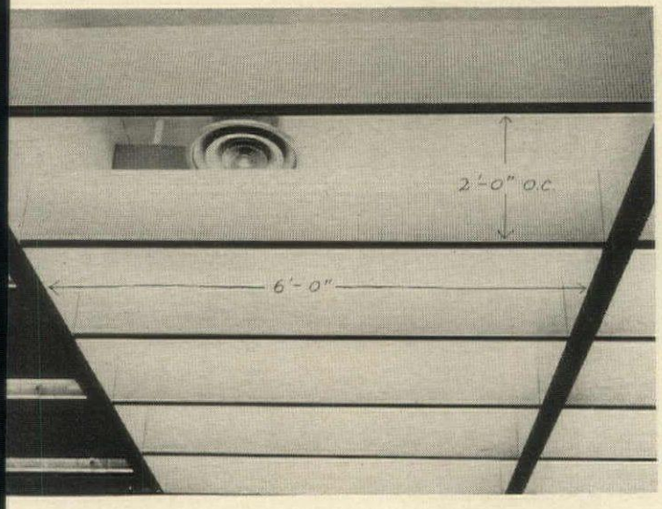
Partitions. After examining most of the standard partitions in general use, the architects felt that they involved too many component parts and required trained mechanics to move them. (The office building is located in the country where such mechanics might be difficult to find.) As a result the architects developed their own partition system. It has only 14 different



WINDOW BLINDS are studied at night



SELECTED CEILING has vertical baffles and exposed fluorescent tubes which will operate at half power to minimize glare.

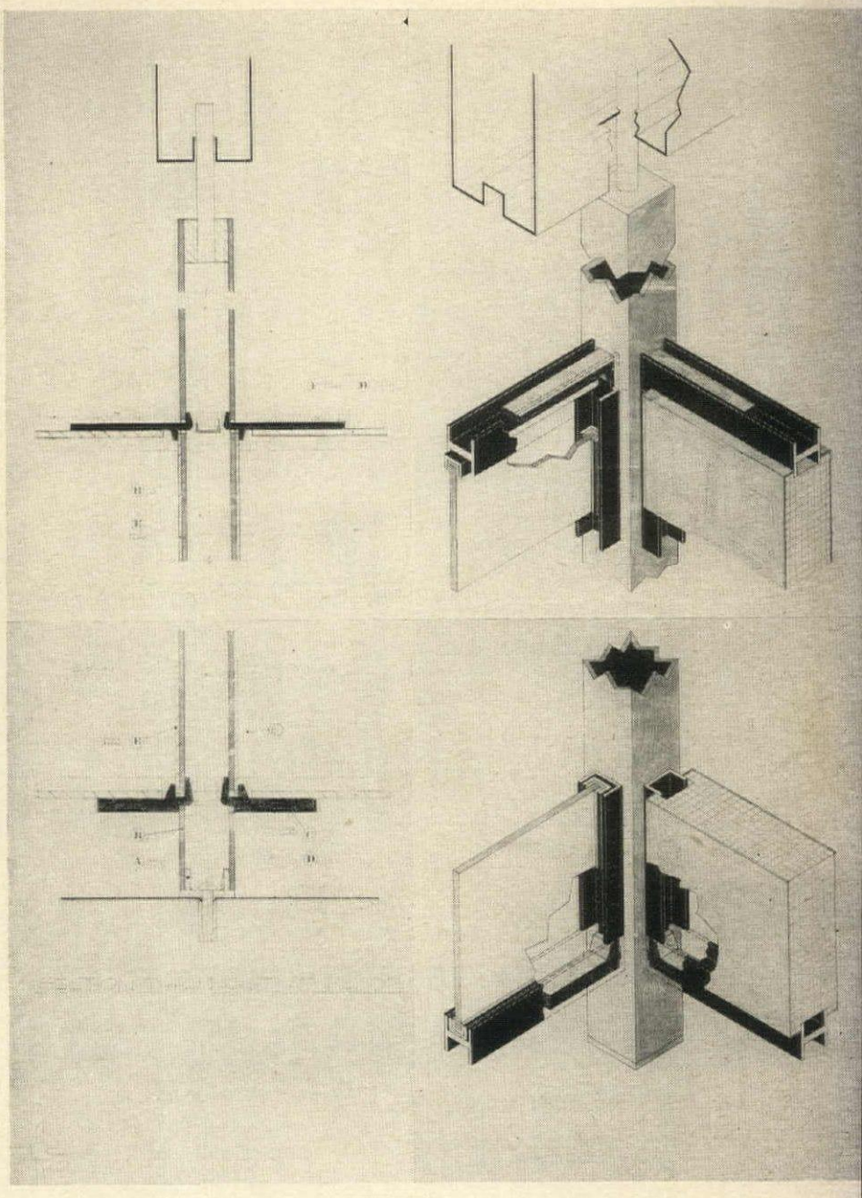


components and can be moved overnight by the insurance company's own maintenance staff. It consists of aluminum posts mounted 6′ o.c. in sockets in the open ceiling and in the floor, and carries 6′ x 7′ translucent glass or core filled plastic.

Windows. After studying the comparative costs of various metal framed windows of ⅜″ green-tinted heat-absorbing glass, big (8′ x 11′) panes set in stainless steel framing were selected. The extra mullions required for smaller (6′ x 8′) windows would have cost an additional $20,000, more than the extra cost of the bigger windows. The glass is set in neoprene gaskets which will be coated after installation with a thin bead of a new highly adhesive and permanently flexible thiokol-based mastic.

Sunshades. From among a number of interior shading devices, a system of 8″-wide vertical shades is being studied.

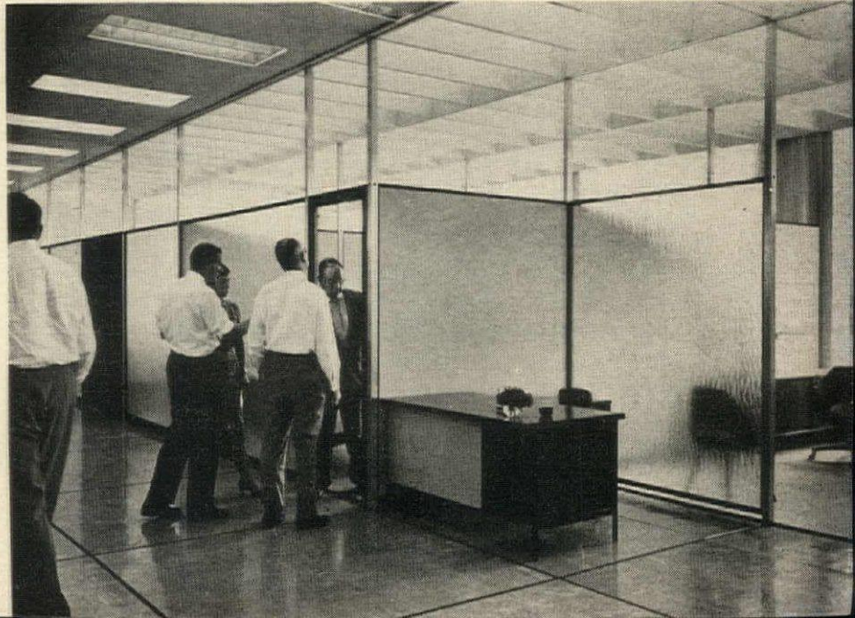
The three-story insurance headquarters (previewed in AF, Sept. '54) is designed by Skidmore, Owings & Merrill, architect, Weiskopf & Pickworth, structural engineers, and Syska & Hennessy, mechanical engineers. Knoll Associates are responsible for the interior design; Turner Construction Co. are the general contractors.



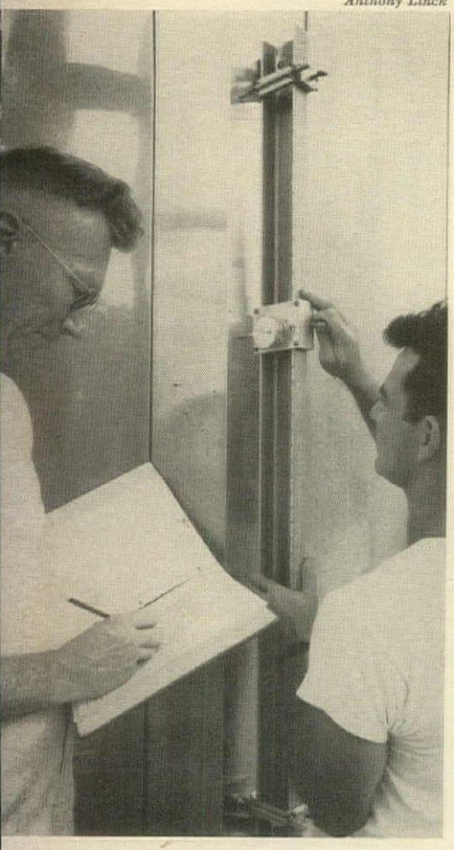
DEMOUNTABLE PARTITION SYSTEM, developed by architects, has only 14 different components, can be moved overnight. It is being patented by owners.

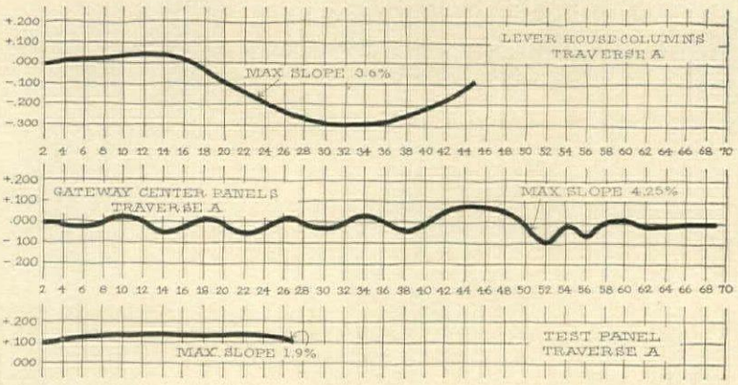
PRIVATE OFFICES will be subdivided by 6′ x 7′ translucent glass or solid plastic panels set 3″ off the floor.

Victor Jorgensen



Anthony Linck

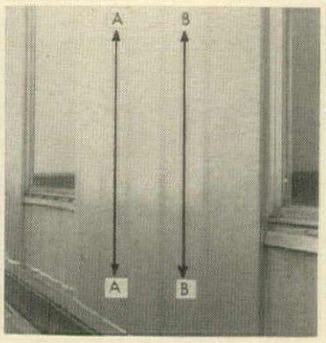




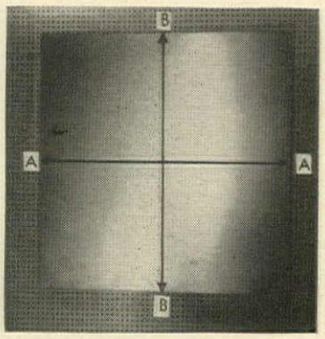
1. LEVER HOUSE COLUMNS: traverse A, charted in profile above, is objectionably wavy.



2. GATEWAY CENTER PANELS: rippled surface with slopes up to 4.25% also appears wavy.



3. TEST PANEL, with slopes under 2%, appears flat. All measurements are in inches.



PROFILE MEASUREMENTS of stainless steel wall panels reveal flatness required to eliminate unsightly waviness

5. CURTAIN WALLS OF STAINLESS STEEL

Princeton study sets new standards for flatness, texture and color, offers three new curtain wall systems

In the spring of 1953 Princeton's School of Architecture was engaged to make a comprehensive study of curtain wall construction by the Stainless Steel Committee of the American Iron and Steel Institute. The researchers were asked to emphasize the use of stainless steel, but they were encouraged to examine curtain walls of all materials, including glass, aluminum and porcelain enameled steel.

Princeton's preliminary report analyzed the design and performance of 20 existing curtain walls (AF, Oct. 54). Soon to be published by AISI in a 192-page well-illustrated book, the final report tells how stainless should be used in curtain walls.

The report also shows that stainless steel, though initially expensive, is a durable curtain wall material and economical when long-term maintenance costs are considered. [Mill rolled, stainless steel costs 50¢ per lb., compared with 8¢ to 10¢ for plain carbon steel and 25¢ for aluminum. —Ed.] The strength and durability of stainless lets it be used in thin 26-ga. (0.019″) wall panels. Enameled carbon steel panels are generally of heavier 18-ga. (0.050″) steel and aluminum panels are 0.125″ thick. [Considering unformed metal costs alone, the square foot cost of 26-ga. stainless, while about twice that of 18-ga. carbon steel, is slightly less than that of ⅛″ aluminum. However, the difference is more than offset by the higher fabrication costs of the tougher, thinner stainless steel.—Ed.]

Stainless has two further advantages: 1) where color is desired, steel can be colored with a thin glazing baked on only one side of a panel without warping the metal; and 2) stainless can be used in joints and for covering sections since it is easily bent, pressed and roll-formed. However, stainless is subject to considerable thermal movement, which might cause joint failures unless controlled by the use of diaphragms or flexible gaskets.

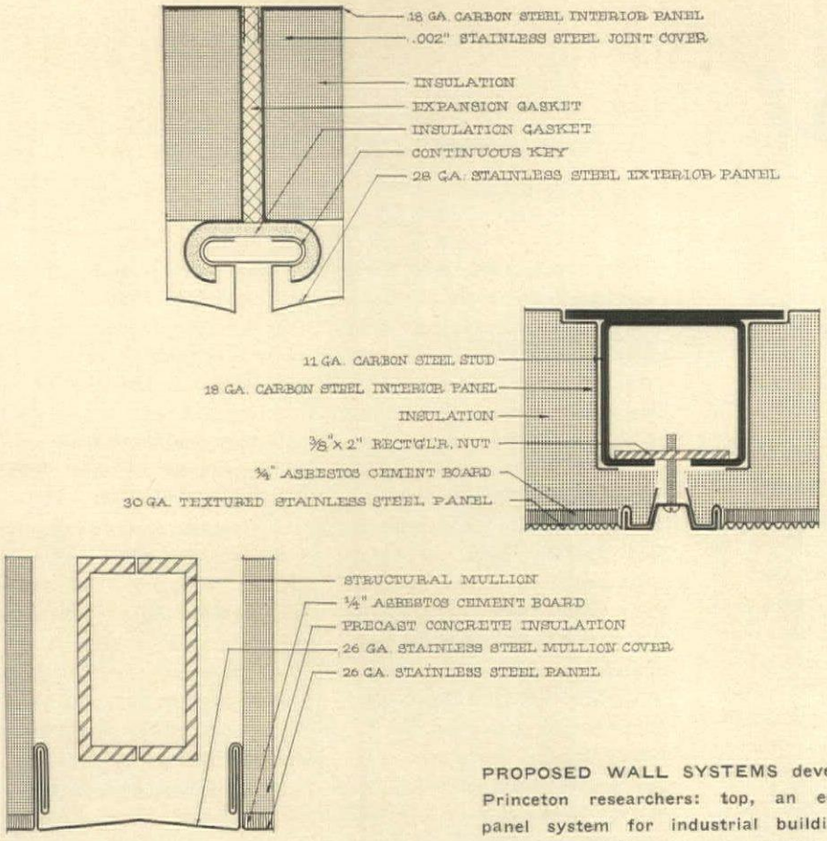
Stainless steel alloys. There are two main groups of stainless steel alloys, the chromium-nickel (300 series) alloys and the all-chromium (400 series) alloys. The chromium-nickel alloys have the best resistance against corrosion and the greatest strength, especially at higher temperatures, but they cost some 20% more than the all-chrome alloys.

Recommendations: Metal panels of stainless steel sheet are recommended for outdoor building use (except in coastal areas), the most economical being the all-chrome alloy type 430, with 14 to 18% chromium.

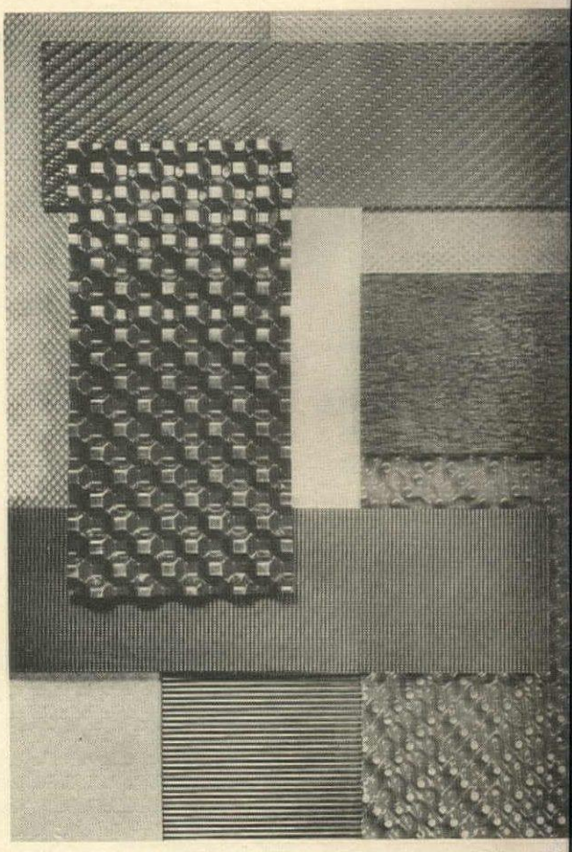
Finish. Various finishes are available for stainless steel, from the plain cold-rolled metal to a highly polished surface. Standard mill finishes available at no extra cost are the No. 2D dull cold-rolled, and the No. 2B bright cold-rolled. Both cold-rolled finishes are attractive enough for general building use. The more expensive polished finishes are used only where appearance is highly important. The standard polish, No. 4, costs 13 to 40% extra but is too highly reflective for building use, since it reflects any light source, regardless of its shape, as a brilliant straight line perpendicular to the direction of the polishing. The Tampico-brushed finish, No. 6, is less reflective, but is still more expensive, 20 to 59% more, than the hot-rolled stainless.

Recommendations: Finish 2D for flat sheets and finish 2B (more reflective) for textured sheets.

Textures. Stainless sheets can be rolled with patterns ranging from 0.005″ to 1⅛″ deep and from ⅛″ to 8″ wide. Such textures provide rigidity, break up reflec-



PROPOSED WALL SYSTEMS developed by Princeton researchers: top, an economical panel system for industrial buildings with minimum openings; above, a stud-wall system for low, nonfireproof buildings; and left, a universal system for multistory buildings, with joints weatherstripped by interlocking stainless flanges.



STAINLESS STEEL TEXTURES are shown one eighth of actual size. Bright spots are exposed metal on panels partly colored by glazing.

tions and conceal unevenness.

Recommendations: Textured sheets are stronger than flat sheets in stainless wall panels, but to simplify jointing the edges should remain flat and have sufficient width to be formed as required.

Color. A change of color is often desirable in a large building façade. This can be achieved at low cost by glazing the steel.

Recommendations: Stainless can be colored efficiently and economically with just one thin coat of glazing, on only one side of a sheet and baked at a low 1,000° F. Only a few high-lighting panels need be colored since the adjacent plain stainless will appear in attractive contrast with the colored panel. Translucent glazing, showing the quality of the stainless through it, is most effective. On patterned sheets, colored glaze on the high spots can be wiped off. (After firing, exposed metal has to be polished since the metal surface turns brown at firing temperatures.) Spatter-finishing with one or more colors and exposing substantial areas of metal can be effective and minimize differential expansion between the glaze and the metal. Small flaws in the thin glazing are not objectionable since the enamel does not spall at exposed edges.

Economical use of stainless. The way to cut the cost of stainless is to use it in as thin a gauge as possible. The metal is strong enough to permit economical sheets as thin as 32-ga. (0.010″), if properly embossed and continuously backed. For instance, a square foot of 14-ga. stainless weighs 3.28 lb. and, rolled in 36″ widths, may cost about $1.67; in contrast, a square foot of 20-ga. stainless weighs 1.57 lb. and may cost about 85¢, 26-ga. metal weighs 0.79 lb. and costs about 49¢, while 32-ga. metal weighs 0.43 lb. and costs about 36¢ per sq. ft. Textured sheets are more expensive: 30-ga. rigidized sheet, for instance, costs as much as 26-ga. plain; while 22-ga. corrugated sheet costs about the same as 18-ga. flat sheet.

Recommendations: For maximum economy use 26-ga. or thinner, type 430, all-chromium stainless, No. 2 finish, embossed or textured, continuously backed if possible, and with a minimum of fabrication.

Visual flatness. The slope of a surface wave is the significant factor in the definition of visual flatness. The AISI standard for stretcher-leveled sheets allows a tolerance of ⅛″ for sheet sizes up to 4′ x 8′ and ¼″ for larger sizes. If the ⅛″ deviation occurs in the center of a 4′ sheet with a gradual rise from each edge, the slope is slight (0.52%) and the sheet appears flat. If the sheet is rippled with the same rise occurring in 6″, the slope is considerably steeper (2.08%) and the wave is readily visible. Tests of numerous sheets determined that: 1) slopes of less than 1% are rarely visible; 2) slopes over 2% are always visible and objectionable; 3) slopes up to 1½% are acceptable in flat sheets; and 4) slopes up to 3% are acceptable in sheets with a heavy, embossed finish.

Recommendations: To ensure visual flatness in stainless steel wall panels, surface slopes should not exceed 1% with Nos. 2B and 4 finishes, 1¼% with Nos. 2D and 6 finishes, and 2% with coarse textures.

Causes of waviness. Waviness in a stainless steel sheet may be caused by stresses set up during manufacture, by unequal thicknesses, in the sheet not being flat (now controlled by stretcher-leveling techniques), by stresses set up during erection of the panels, by thermal expansion (but in many cases the waviness remains after the temperature drops), by shrinkage of a backup material, or by movement of the building frame.

Tests of the effects of heat upon stainless sheets laid with the ends restrained

continued on p. 192

for all concerned

FROM EMERGENCY, EMERGENCE

More tragic than having an avoidable catastrophe is preparing to have it all over again.

This year's floods cost our people lives by the hundred and close to $2 billion in money. The floods were not "acts of God," but largely the consequence of human mismanagement — avoidable mismanagement—in the fields of planning and building.

Some things can be done about floods right away: we can plan to avoid catastrophe where we do new building, and we can rebuild in flooded areas on a pattern different from that which positively invited the disasters. This will not be easy but it will be achievable if broken down into specific assignments.

The key to the whole flood situation lies in the intrinsic nature of rivers. Thirty years ago a shrewd New Englander, Benton MacKaye, pointed to the perfectly obvious fact that almost every river has three natural levels. One is its normal summer level when all seems safe and peaceful. Second is its normal flood level involving an area inundated by spring freshets, where building is unwise. Third is the disaster level, which may not be hit for decades or even centuries, when the stream kicks out of bounds like a wild beast and produces, with fearful erosion, the pattern which any sharp eye can discern as the "flood plain." The fact that the flood plain is there proves that the river has been there—and can come again.

Why did our ancestors build on these flood plains when the savage Indians knew enough to keep safely higher? The answer was water power delivered to riverside mills over the waterwheel. These wheels are gone, but we stayed anchored by our investment in plants, railroads, highways, all in the wrong place, and land values — again in the wrong place—which these have created.

A small town like Putnam, or Winsted, Conn., cannot well rebuild on the river, but it could now move its plants higher. Power comes no longer from the river direct but from dams higher up or from steam plants. Earth-moving machinery makes it not uneconomical to prepare higher sites. New highways might better be built up there in any case.

What then is the obstacle? Mostly a set of obsolete pictures in the townsmen's minds. Zoning authorities, who once relegated industry to the flood plain because industry was dirty, smoky and noisy, have failed to notice that new fuels, new smoke-consuming devices, noise abatement and a new code of being a gentleman, let industry be often a first-class neighbor. Even the conservative British have reversed themselves and often rezoned their river cities.

For the town, small or big, planning and financing problems come next. Merchants and industrialists who wish not to rebuild where floods will certainly kill more citizens and destroy more values before the year 2000 must band together in producing new shopping centers and new industrial centers farther up and out. Some fairly drastic use may have to be made of federal redevelopment aid because the existing flood plain, representing a heavy investment, cannot be used for much more than outdoor recreation. Nevertheless, such use of federal funds is much easier to justify than aid given to New York City for a $40 million coliseum.

State and federal governments will have to come in where towns like Winsted or Putnam leave off, since the causes of floods are remote, not local. Here again MacKaye had sage advice. He pointed to the enormous waste of all-out flood control programs. Where it is assumed that building will be done right down to the riverbank, and all water above normal summer level must be held back, the result is a vast overdesign of dams and reservoirs at enormous expense. Moreover the fine agricultural land or hunting and fishing preserves that are drowned are sometimes themselves priceless. When all costs are balanced, funds spent helping towns to draw back from the flood plain may be saved twice over in lessened public works, which no longer try to challenge Nature's annual rhythm.

A wise program builds large reservoirs only where these double as economical power sources, and seeks to hold back only that final volume of water which causes disaster. After the Dayton flood of 1913 in Ohio, systems of dry reservoirs were laid out which could be farmed during normal years and would take the overflow only when it became major.

Perhaps enough has been said to suggest that the problem is one of local planning and also of regional planning. It so happens that both Pennsylvania and New England have splendid schools of city and regional planning. Why not give them the needed funds and then let their recommendations be thrashed out in city after city just as the school problem is being thrashed out ahead of the White House Conference?

Since the building industry is directly and extensively involved, architects and builders should take the lead. Let us turn our emergency into an emergence—of better community planning.

LIFE—*Bourke-White*



—

Footnote to the episode of the Air Academy: Contrary to some suggestions being made, FORUM thinks the architectural profession will do better with a dignified response to Frank Lloyd Wright than with heat and rancor. There is no more dignity to be gained now by lashing back at an older man than there was by knuckling under to him when he was young. Wright is a genius who has done a great deal, suffered a great deal, and said a great many wrong unfair things. As we deal with his worst let us remember his best — for our own sake rather than his.

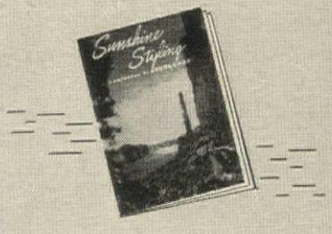
Douglas Haskell

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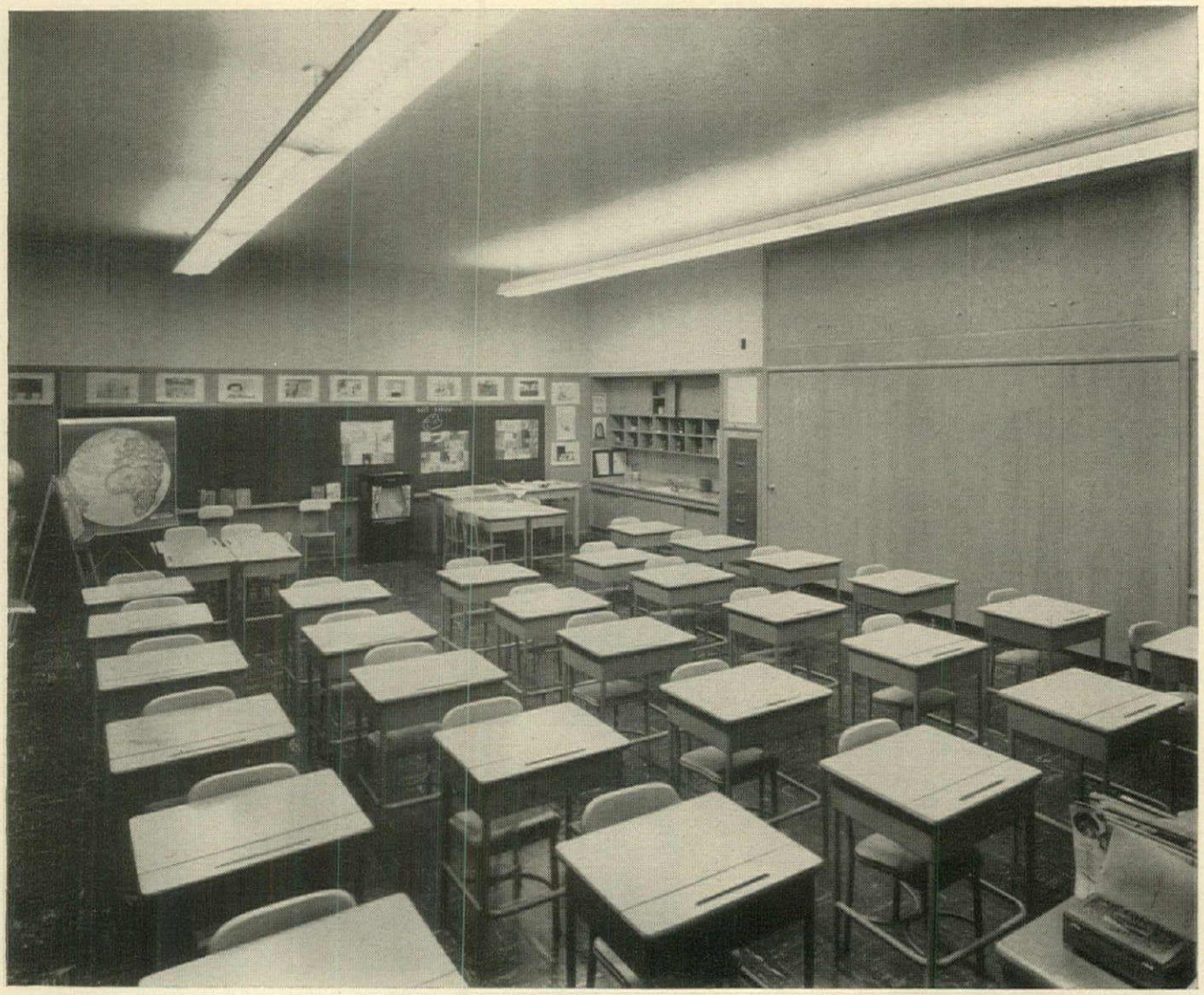
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High Level Lighting for Faster Learning... with Lighting by **LITECONTROL**

Better lighting helps young minds learn faster, more comfortably in this remodeled Harrisburg, Pa., school. Both the original building (above) and the new wing now have their classrooms entirely lighted by LITECONTROL.

LITECONTROL fixture No. 6628 gives plenty of high intensity, low brightness illumination everywhere. Efficiency is an unusually high 86%. Light through the top of the fixture cuts fixture-ceiling contrast and helps minimize glare.

Two-piece construction means installation is fast and simple, whether the units are hung individually or in continuous rows. Maintenance is easy, too: baffles swing fully open from either side without the use of tools. Fixtures may be cleaned and relamped in seconds.

Whether your job is lighting or relighting, for a custom installation at standard fixture prices, get in touch with LITECONTROL. Call or write your local representative.

INSTALLATION: Hamilton Elementary School, Harrisburg, Penna.

ARCHITECT: Clayton J. Lappley, Harrisburg, Penna.

ENGINEER: Snyder & Van Horn, Harrisburg, Penna.

ELEC. CONTRACTOR: The Howard P. Foley Company, Harrisburg, Penna.

FIXTURE: Litecontrol No. 6628 and 6624, pendant mounted.

INTENSITY: New rooms (with fixtures hung on 8" stems), average 52 footcandles initially on desks.

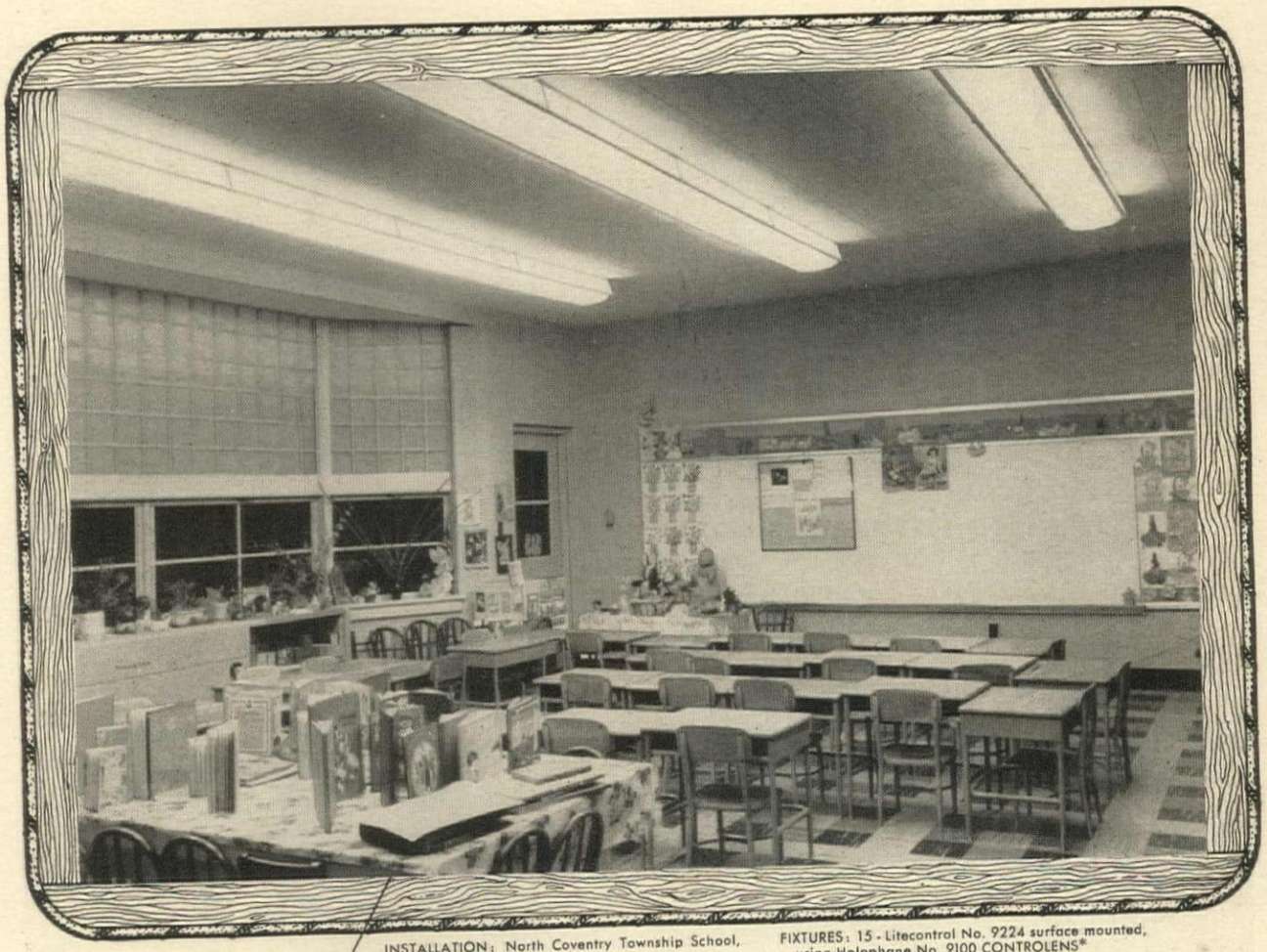
Old rooms (with fixtures hung on 24" stems), average 47 footcandles initially on desks.

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INSTALLATION: North Coventry Township School, Pottstown, Pennsylvania.
DESIGNED BY: Eastern Engineering Co., Reading, Pennsylvania.
AREA: Lower Grade Elementary Classroom 24′ x 30′.
CEILING HEIGHT: Approximately 9′-6″.

FIXTURES: 15 - Litecontrol No. 9224 surface mounted, using Holophane No. 9100 CONTROLENS*
SPACING: 8′-0″ on centers.
INTENSITY: On desk top beneath fixtures, 70 footcandles initially. Average over room, 47 footcandles initially.



Bright Solution

to an old classroom problem

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EYES have it easy in this light, attractive classroom. Note the even illumination... the absence of glare... the ease of seeing... all carefully calculated to protect young eyes... keep them alert and learning all day long.

Add to this the smart appearance of LITECONTROL'S standard lighting fixtures No. 9224... plus their unusually low cost of upkeep... and there you have the three big advantages offered by LITECONTROL'S *complete line* of standard lighting fixtures: Good light for good sight, with good looks, and easy maintenance.

When you want the same — a lighting installation that's custom in appearance... at standard fixture costs — consult your local LITECONTROL Representative. *Reg. Trademark

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Conference Room, Emory University, Atlanta, Ga.
Robert & Co. Associates, Architects, Barge-Thompson Co., Builders.

Write for the new Mills folder:
"Space Control for School Buildings"



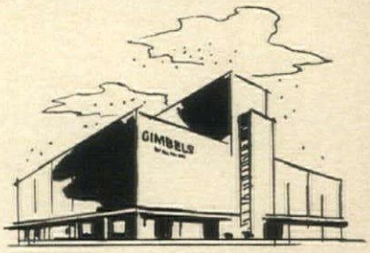
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St. Regis Panelyte in beautiful marl white pattern on both vertical and horizontal surfaces in Gimbels new branch store in the Cross County Center.

Raymond Loewy Corporation, famed industrial designers and store planners, specified St. Regis Panelyte for the Smoke Shop in their design for the fabulous new Gimbels Westchester store in the Cross County Center, Yonkers, New York.

A growing number of leading architects are discovering increasingly wide applications for St. Regis Panelyte . . . wherever beauty and durability must be combined on vertical and horizontal surfaces.

Write for Technical Data* and sample chips to Architects' Consulting Service Department. Panelyte Division, St. Regis Paper Company, Sales Subsidiary: St. Regis Sales Corporation, 230 Park Avenue, New York 17, N. Y.

See St. Regis Panelyte in SWEET'S Architectural File $\frac{13a}{Sa}$.

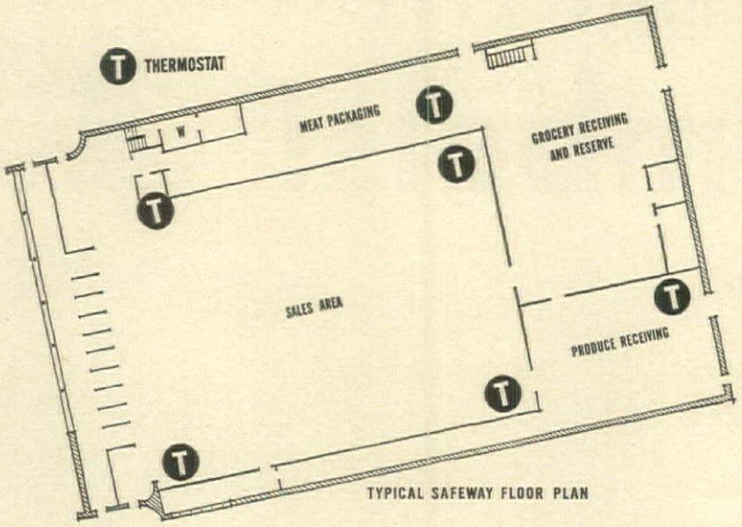
*Performance standards set for the industry by the National Electrical Manufacturers' Association for thermo-setting decorative laminates.

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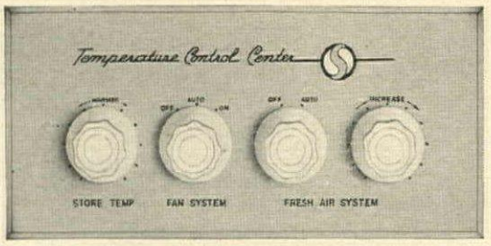
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New Safeway stores get most advanced comfort control system available



TYPICAL SAFEWAY FLOOR PLAN



Electronic panel, specially designed for Safeway stores, gives complete control of heating, cooling, ventilating and humidifying equipment to the Safeway store manager. In addition, Honeywell Electronics ideally meets basic Safeway control requirements — year-round air conditioning in main shopping areas, cooling *and* humidity control in produce storage rooms. Only electronics could supply other advantages wanted by Safeway management, listed opposite. Typical Honeywell installations are in eight new Safeway stores on the west coast.

Honeywell Electronics makes commercial building

Safeway Food Store, Walnut Creek, Calif. Architect: Arthur A. Iwata, Berkeley. Consulting mechanical engineer: Maurice R. Archer, Oakland. Electrical engineer: Ray Williamson, Oakland. General contractor: MacDonald, Young & Nelson, San Francisco. Mechanical contractor: Atlas Heating & Ventilating Co., San Francisco.



Major advantages of Honeywell Electronic Customized Temperature Control

Central Control. Special Honeywell panel provides a compact supervisory control center. Adjustments are made *at the panel.* Panel access may be free, or restricted to building manager or one trained employee to prevent tampering. *Electronics makes central control economically feasible.*

Averaging. It's easy to maintain even temperatures in uncompartmented areas; just place inexpensive electronic thermostats wherever they're needed. Heating-cooling plant is controlled by the average reading of the several thermostats. Only one setting is required.

Outdoor compensation is sure and simple. Large glass areas, occupancy, exposure pose no problems; electronic controls meet heating or cooling demands rapidly. Outdoor thermostats anticipate weather changes, eliminate temperature drift in winter, air-cooling shock in summer. Results: consistent comfort, economy.

Automatic changeover from heating to cooling can be achieved with the same thermostat.

Ventilation economizer cycle automatically uses outside air to help carry cooling load, cutting refrigeration costs.

In addition, an electronic system is easy to install. And electronic controls, having no moving parts, are exceptionally long-lived.

any modern

easier to plan, more profitable to operate

Individually designed Honeywell Electronic Temperature Control delivers advantages no other control installation can duplicate

HONEYWELL ELECTRONICS is the latest development in temperature control. It's big news, *important* news, for you and your clients. The case of eight new Safeway food stores in California and Washington shows why.

In meeting control needs peculiar to today's supermarkets, Safeway's planners wanted all the basic advantages of a good control installation, and more. They wanted refinements as modern as their stores—refinements that promised long-range efficiency and safety from obsolescence for many years ahead. Wisely, they chose Honeywell Electronic Customized Temperature Control. Features of the installations and how they function for Safeway stores, are briefly described above.

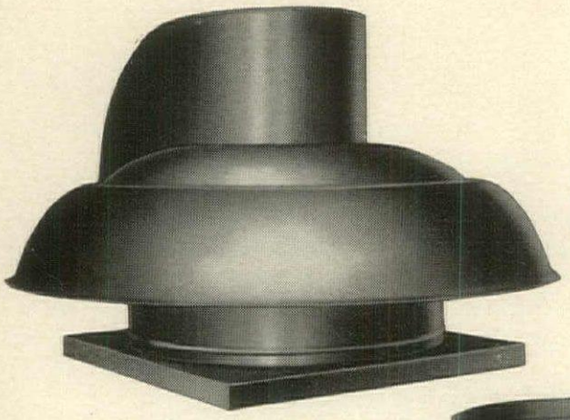
Why electronics? The reason, in a word, is *flexibility.* No other temperature control system adapts so readily to so many specific job requirements. No other system is so efficient—management's assurance of important economies in operating costs, of unprecedented comfort and convenience.

These benefits suggest some of the ways Honeywell Electronic Customized Temperature Control can help you and your clients—in heating, ventilating, air conditioning and industrial control, in any building, new or existing. For the new booklet, "Flexible as a Strand of Wire", giving full information on Electronic Customized Temperature Control, call your Honeywell office. Or write Honeywell, Dept. MB-10-137, Minneapolis 8, Minn.

MINNEAPOLIS **Honeywell**

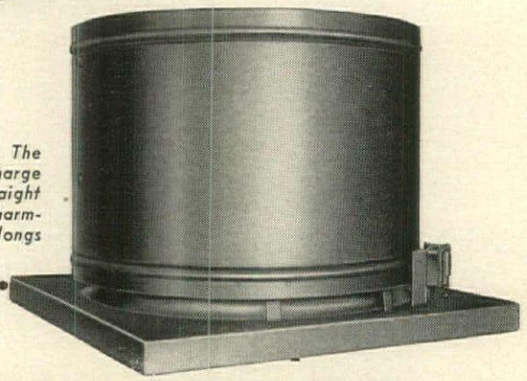
Electronic Controls

112 offices across the nation

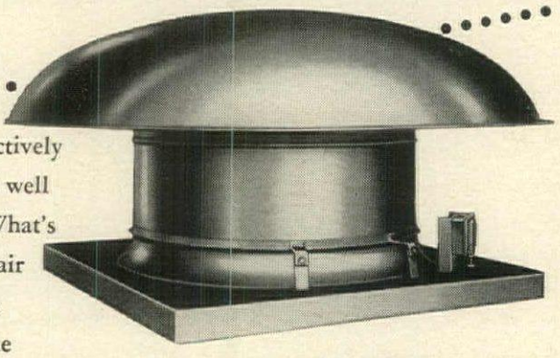


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EXCERPTS

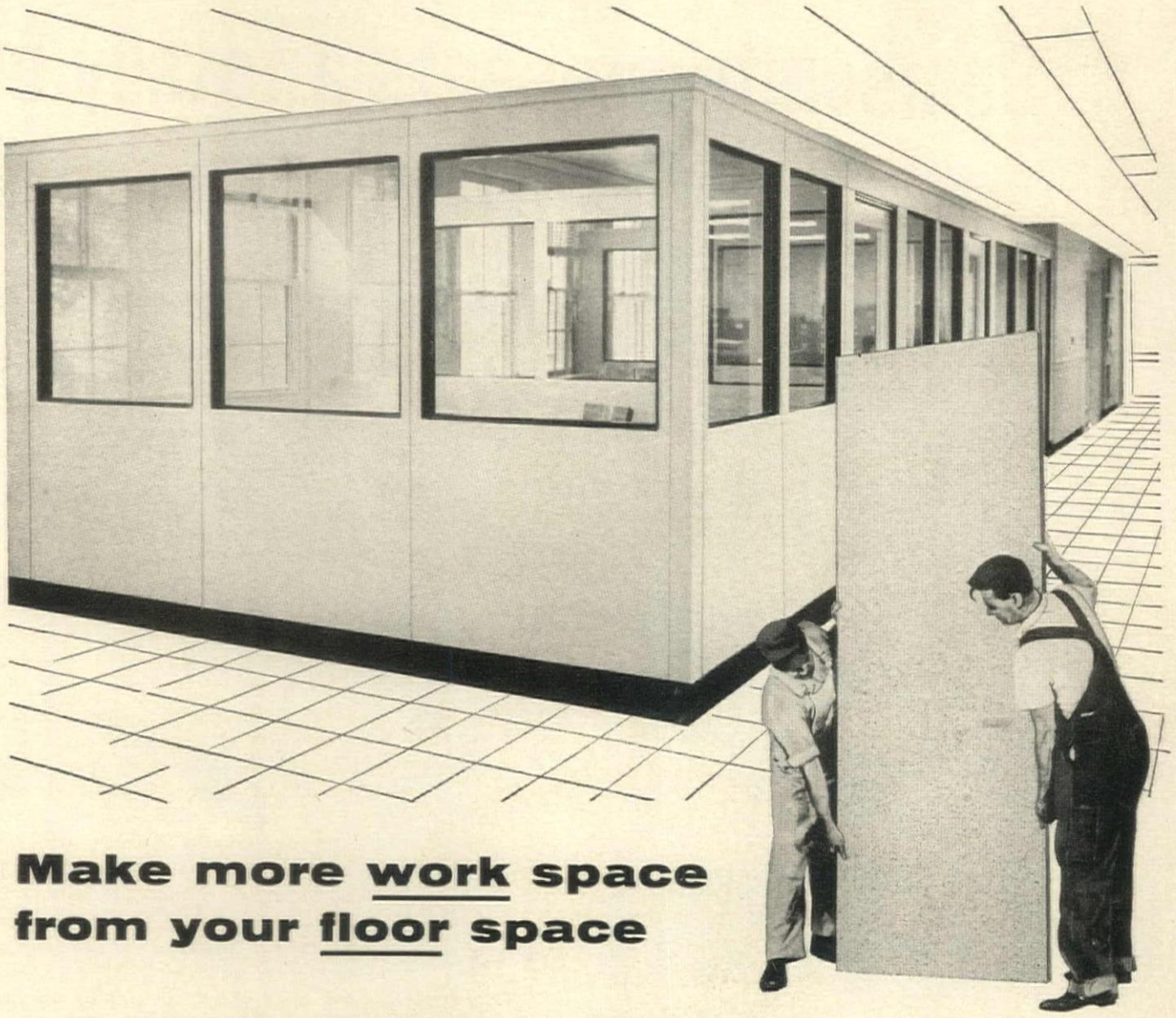
Continued from p. 157

the normal service," but Pennsylvania adds a time factor: "All engine and turbine systems shall provide illumination not later than 15 seconds after power failure."

The most significant difference between the National Electrical Code and the Pennsylvania regulations, which are entitled *Construction, Installation and Maintenance of Emergency Lighting Systems,* appears in the crucial question of power supply. The National Electrical Code allows the emergency lighting circuit to be supplied from the same source of electrical energy as the normal lighting circuit if the two circuits are wired so that "an occurrence within the building" will not result in simultaneous interruption of both circuits. It is obvious, however, that this system provides no protection against power failures outside the building, which is where one half to nine tenths of all power failures occur. Recognizing this fact, the Pennsylvania regulations state emphatically that two separate sources of energy must be present in an emergency lighting system. Pennsylvania, in short, is the only state whose requirements seem to afford an adequate degree of protection against the hazard of sudden darkness.

At the opposite extreme, there are a half-dozen states with no emergency lighting requirements at all. In between there are 17 states with emergency lighting regulations equivalent to the occupancy requirements of the Building Exits Code and the installation requirements of the National Electrical Code, and 24 more states whose emergency lighting regulations fail to measure up to the standards of one or the other of the two codes. Included in the latter category are those states whose only emergency lighting requirements are incidental to the state's participation in the federal Hospital Survey and Construction Program. All of these details are shown in the table (p. 157).

The way to get standards as good as Pennsylvania's is to enact the Building Exits Code, which is already an approved American Standard, and then to work through the machinery set up by the American Standards Assn. to revise and improve the code itself. The way to put the Building Code into effect is to enact legislation a) requiring "reasonably safe" exit facilities in all buildings occupied by large numbers of people for any purpose whatever; b) providing that conformity with the Building Exits Code shall be prima-facie evidence that such buildings are reasonably safe; and c) defining the failure to provide reasonably safe facilities as a criminal offense.



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New Johns-Manville Class A Movable Walls offer you advantages never before combined in an asbestos movable wall. They are modestly priced. They are noncombustible. They have a textured, stipple finish in restful colors. They reduce maintenance and relocation costs to a new low.

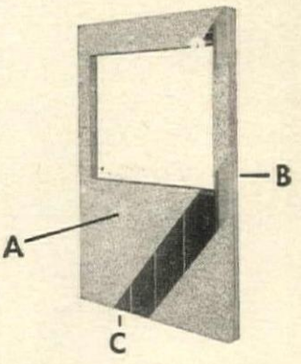
The finish of Johns-Manville Class A Movable Walls is a tough, hard film much thicker than on the usual movable partition. It is mar- and scratch-resistant . . . rejects stain and soil . . . can be easily washed and even scrubbed, if necessary. If damaged, it can be touched up inexpensively to look like new . . . and, unlike other types of factory-finished partitions, can be repainted with ordinary paint.

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A Noncombustible asbestos-cement surfaces

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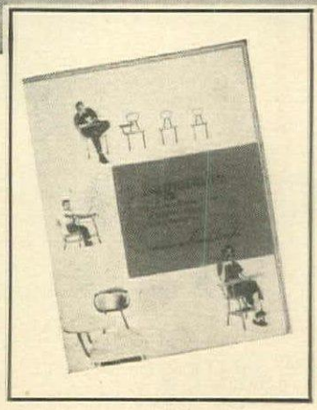
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New Samsonite Classroom Furniture Catalogue. Complete specifications on new Samsonite Classroom Furniture. Fully illustrated in color. Write Shwayder Bros., Dept. Q-11. Classroom Furniture Division, Detroit 29, Mich. for a copy and for the name of your nearest distributor.

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Samsonite

concept in Classroom Furniture

actually aids the Educative Process!

Samsonite has created an entirely new concept in Classroom furniture... as exciting as it is practical.

4 Paint-Box Colors make classrooms bright and fun to work in! Tested on school officials in 30 states, the colors mix or match harmoniously, blend with every wall color!

Shaped for Tomorrow! The gracefully curved contours are posture-designed to build healthy bodies, make attention less tiring, learning more fun!

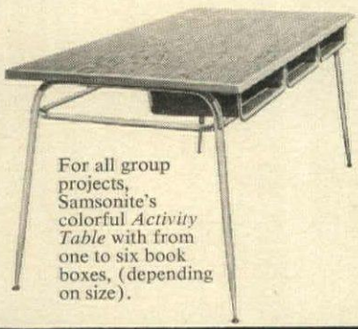
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Mischief-Proof! Aluminum "spats" on legs defy kick and mop marks! Desk-lid hinges and countersunk "bumpers" can't be loosened, even with a screwdriver!

It's Not Expensive! Samsonite actually costs *less* than old-fashioned furniture... because it's strongest, lasts longest!



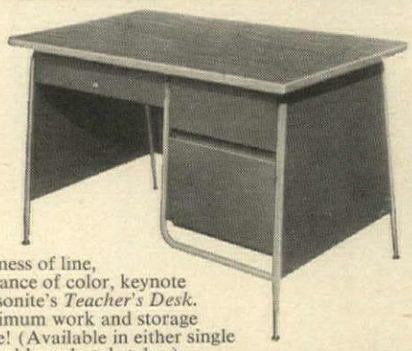
A new note in schoolroom furniture, Samsonite's *Round Table* lends an informal, non-institutional look to the classroom!



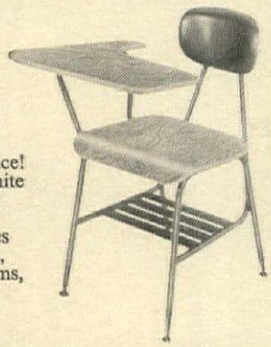
For all group projects, Samsonite's colorful *Activity Table* with from one to six book boxes, (depending on size).



Samsonite's colorful *Lift-Lid Desk* is noiseless, slam-proof, tamper-proof. Fingers can't be caught between lid and book box.



Newness of line, brilliance of color, keynote Samsonite's *Teacher's Desk*. Maximum work and storage space! (Available in either single or double pedestal styles.)



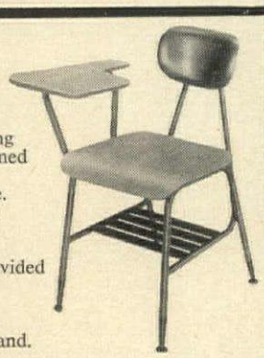
290 square inches of writing surface! New Samsonite *Tablet Desk Chair* plays multiple roles in classroom, meeting rooms, lunchroom.



Samsonite *Student Desk* can also serve as table. Several can be pushed together for group projects.



New Samsonite *Trapezoid Table* adapts in groups to endless combinations for varied schoolroom activities.



Tablet-Arm Chair with generous writing surface positioned for natural writing posture. Sturdy tubular steel supports. Easy slide-in, slide-out is provided by lines and curve of tablet arm. Right or left hand.



Plenty of leg room and storage space! The Samsonite *Shelf Desk* brings modern color, graceful lines to the classroom.

folding tables and chairs for every institutional use!

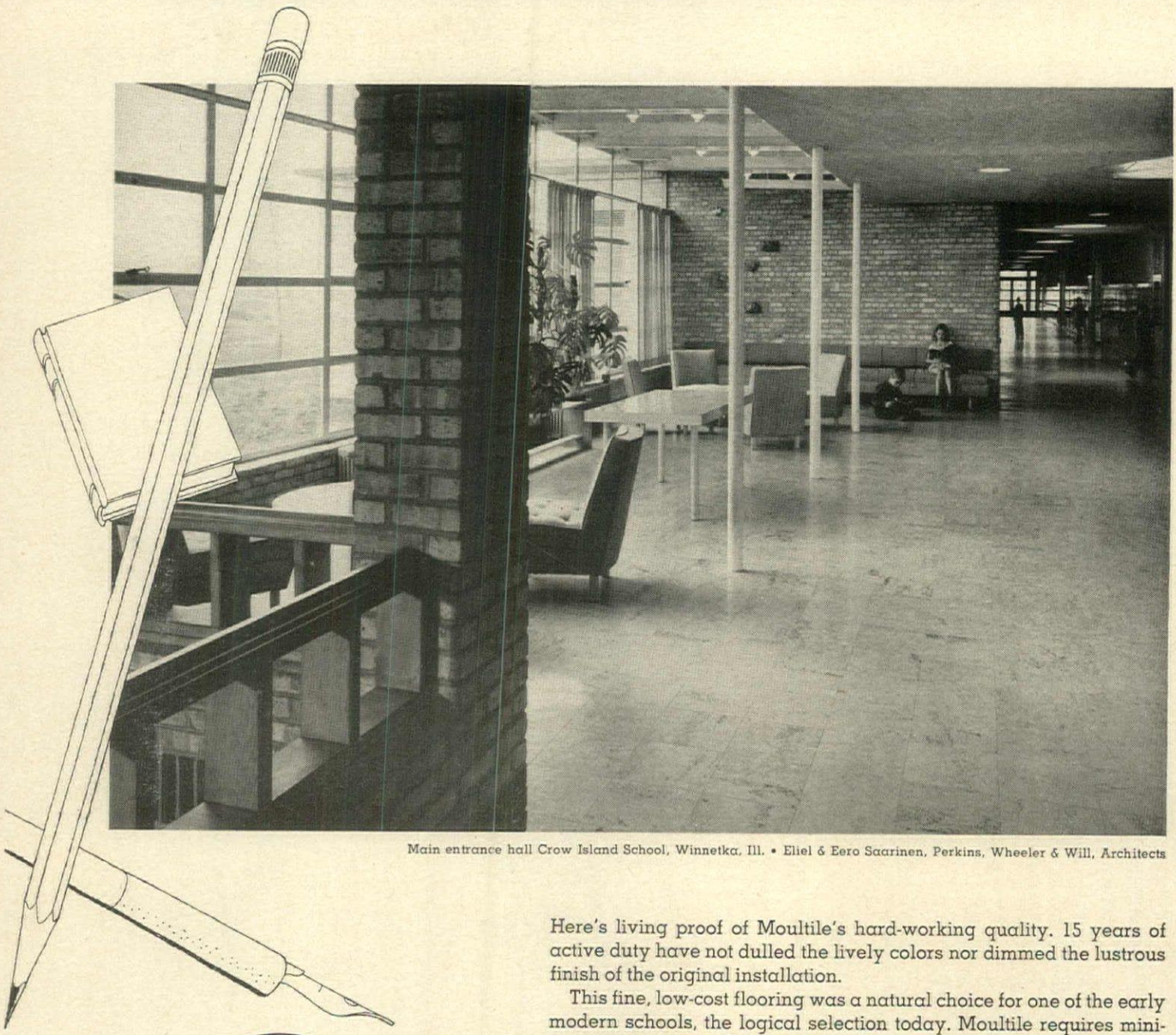
...the Classroom Furniture that's **STRONGEST... LASTS LONGEST!**

*Design and structural patents pending

SHWAYDER BROS., INC., CLASSROOM FURNITURE DIVISION, Dept. Q-11, Detroit 29, Mich. Also makers of famous Samsonite Luggage and Card Tables and Chairs for the Home.

15 YEARS TELL THE STORY...

Moultile FLOORS IN CROW ISLAND SCHOOL ARE STILL COLORFUL AND NEW LOOKING



Main entrance hall Crow Island School, Winnetka, Ill. • Eliel & Eero Saarinen, Perkins, Wheeler & Will, Architects

Here's living proof of Moultile's hard-working quality. 15 years of active duty have not dulled the lively colors nor dimmed the lustrous finish of the original installation.

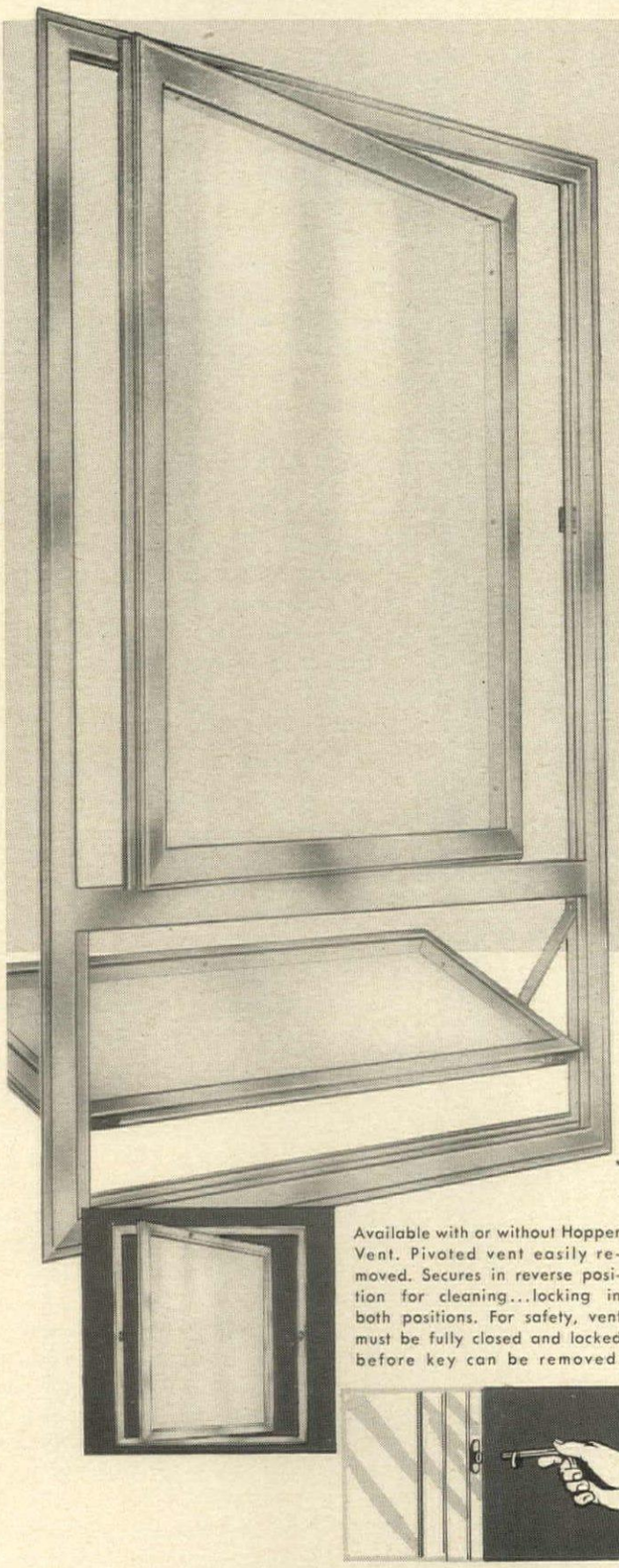
This fine, low-cost flooring was a natural choice for one of the early modern schools, the logical selection today. Moultile requires minimum maintenance because it resists dirt, grime and scuff marks, is easy and economical to keep clean. Precision-cut edges and corners help keep installation costs down, too.

In classrooms and halls at Crow Island School, or in your school, Moultile Asphalt Tile provides pleasing color as well as practical quality. At your request, we will be happy to send you complete specification data including a chart of Moultile's 29 crisp, clear colors.

Moultile
PRODUCTS
SINCE 1929

MOULTILE INCORPORATED · Joliet, Ill. · Long Beach, Calif. · Newburgh, N. Y.

For modern multi-story buildings...



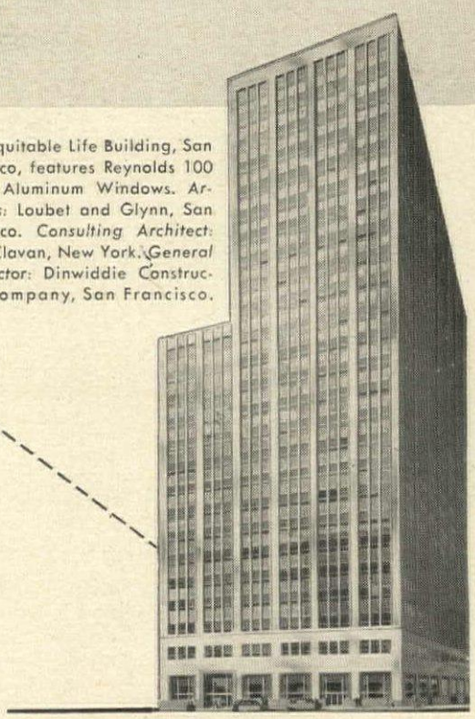
REYNOLDS 100 SERIES

Vertically pivoted

ALUMINUM WINDOWS

This window meets both the design requirements and the special functional needs of today's multi-story buildings. It provides the minimum air infiltration important in air conditioning, and the positive locking essential to safety. Yet this airtight window is easily opened for washing entirely from the inside. Special jamb design accurately positions window in fully closed and washing positions. All-welded frame construction has self-draining feature. Manufactured to architect's size requirements. Write for catalog. **Reynolds Metals Company,** Window Division, 2020 South Ninth Street, Louisville 1, Kentucky.

Available with or without Hopper Vent. Pivoted vent easily removed. Secures in reverse position for cleaning...locking in both positions. For safety, vent must be fully closed and locked before key can be removed.



New Equitable Life Building, San Francisco, features Reynolds 100 Series Aluminum Windows. *Architects:* Loubet and Glynn, San Francisco. *Consulting Architect:* Irwin Clavan, New York. *General Contractor:* Dinwiddie Construction Company, San Francisco.

REYNOLDS ALUMINUM

BUILDING PRODUCTS

See "FRONTIER," Reynolds new dramatic series, Sundays, NBC-TV Network.

CURTAIN WALLS

Continued from p. 177

showed: 1) that the metal buckled in proportion to the rise in temperature, but returned to its original flat state upon cooling; 2) that, for a given temperature rise, the slope of the buckling varies with the ratio of the length to the thickness of the sheet (1/d) up to a value of about 240, at values above 300 the slope remains constant; 3) objectionable buckling (with slopes over 1½") may occur with a temperature rise of 100° F.; and 4) sheets with a 1/d ratio of under 200 will develop a slope of no more than 1½% for a temperature rise of 100° F.

Recommendation: To control thermal expansion use a 1/d ratio of under 200 in designing flat, unbacked wall panels of 302 stainless. Distances between supports or stiffening ribs should not exceed 7.5" for 20-ga. sheet; 3.8" for 26-ga. sheet, and 2" for 32-ga. sheet.

Continuous backup of sheet stainless

The lamination of stainless steel to plywood has been successfully practiced for many years. In one application the metal is still visually flat after ten years. The same principle can be applied using incombustible materials. Tests of such materials determined that: 1) lamination of thin stainless sheet (.010" to .020") to asbestos-cement board, gypsum board and calcium silicate board is feasible; 2) epoxy resin gives better adhesion than synthetic rubber but costs twice as much; 3) laminating should be performed at low pressures; and 4) for economy and minimum waviness formed edges on the sheet stainless should be avoided.

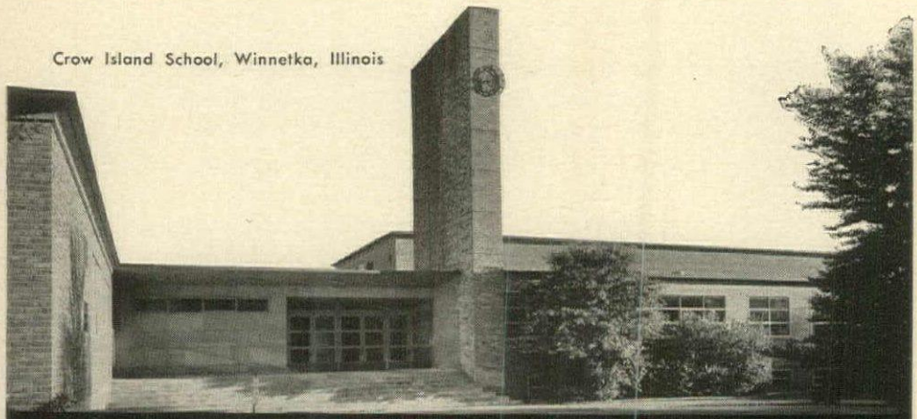
Since the three insulation boards tested do not possess in themselves sufficient strength to function as curtain walls, they require backup. To find a backup having both strength and insulation, tests were made of poured concrete backup. Results: natural bond between metal and concrete proved adequate with stone concrete but inadequate with lightweight insulating concrete. However, adequate bond with the latter was achieved by adding an adhesive on the back of the stainless steel panel.

Design summary for stainless panels

- Avoid large flat surfaces.
- Avoid reflective finishes.
- Specify stretcher-leveled sheets.
- Use embossed or textured sheets.
- Attach the panel to the building without strain and allow it some freedom of movement.
- Ensure that the face of the panel is visually flat—within the limits detailed above.
- Use continuous backing behind the metal skin—lightweight insulating concrete for a fireproof panel, cement or excelsior board for an incombustible panel, and fiber insulating board with asbestos-cement faces where combustible materials can be allowed.
- If the metal face is not continuously backed, the distance between stiffening members should not exceed the limits detailed above.

After some comprehensive discussion on joints, insulation, vapor barriers, systems of attachment of the panels to a building frame, and fire and building codes, the Princeton research report concludes with the introduction of the three new basic curtain wall systems shown on p. 177.

Crow Island School, Winnetka, Illinois



TOP CONDITION...after 15 years
ROBBINS IRONBOUND* CONTINUOUS STRIP*
MAPLE FLOORS AT CROW ISLAND SCHOOL



Robbins Ironbound Continuous Strip Maple Floor in gymnasium. Unretouched photo, taken August 1955.

Crow Island maintenance men say the Robbins floors stay in top condition . . . they're easy to clean, easy to maintain, and after 15 years, show little sign of wear.

From coast to coast, in classrooms, gymnasiums, school shops . . . wherever a floor must be able to "take it" and remain smoothly beautiful, you'll find Robbins Ironbound Continuous Strip Maple Floors. Robbins floors mean real long run economy because they're easy to care for and look like new after generations of hard use.

Write for the name of your nearest Robbins contractor-installer. He'll show you specifically how much you save with beautiful maple flooring.

Address inquiries to Robbins Flooring Company, Reed City, Michigan

MILLIONS WALK DAILY ON ROBBINS FLOORING

* T.M. Reg. U.S. Pat. Off.

ROBBINS FLOORING COMPANY

World's Largest Maple Flooring Manufacturer

Reed City, Michigan • Ishpeming, Michigan

Protect Masonry's Original Beauty and Quality

SPECIFY WATER REPELLENTS MADE WITH "LINDE" C-25 SILICONE

CONTROL EFFLORESCENCE: Preserve original building beauty with lasting control of unsightly efflorescence, streaking, staining.

KEEP BUILDINGS CLEAN: Since water cannot penetrate, rain washes dirt and dust right down to the ground. Yet walls can still "breathe."

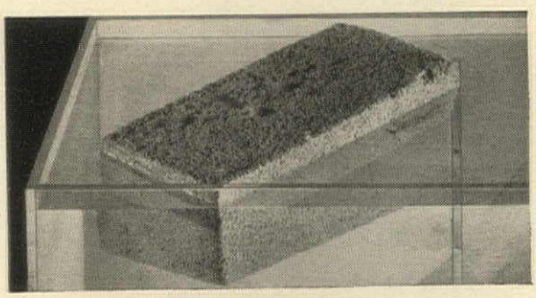
RETARD WEATHERING, SPALLING: Eliminate chipping, cracking, spalling due to freezing by keeping water out of masonry.

PREVENT WATER SEEPAGE: Damage from water penetration to interior wood, plaster, paint is a thing of the past. Maintenance costs drop.

LONG LASTING: Accelerated weathering tests indicate effectiveness lasts up to ten years.

APPLIES WITH EASE: By low-pressure spray or flood brushing. Dries quickly for clear, colorless finish.

Will Make A Brick Float



This lighter-than-water fire brick was coated with masonry water repellent made with *Linde* C-25 Silicone, and dried thoroughly. Placed in tank, it repels the water and floats like a cork. Untreated, brick would soak up water and sink instantly.

Sample Specifications

1 All above-grade masonry exposed to weather shall be treated with clear silicone masonry water repellent.

2 At the time of application to new construction, any mortar shall be at least 30 days old. If weather has bordered on freezing, the age before treatment should be approximately 60 days. Product used shall be a concentration of at least 3% LINDE C-25 Silicone in mineral spirits.

3 After all mortar has properly set, one flooding coat of clear silicone water repellent as specified shall be applied to all masonry surfaces from top down to grade. The water repellent shall be delivered to the site in sealed containers, and be applied in strict accordance with the manufacturer's instructions. At the time of treatment the building shall be dry. Following rain, two to three days of clear weather shall have elapsed to allow the masonry to dry. Application can be made at any temperature between 0 deg. F. and 100 deg. F. It will take longer for solvent evaporation at the lower temperature. Coverage shall be sufficient to provide a run-down of 6 to 12 inches. Approximate coverage per gal. should be as follows:

Hard-Fired Brick . . . . . 150 sq. ft. per gal.
Concrete Block . . . . . 150 sq. ft. per gal.
Soft Brick . . . . . 100 sq. ft. per gal.
Light Weight Aggregate Brick . 75 sq. ft. per gal.

4 Normal safety precautions common to handling hydrocarbon solvents should be taken to prevent fires, to avoid excessive inhalation of solvent fumes, and to avoid excessive contact with the skin.

FOR FURTHER INFORMATION WRITE DEPT. A-10.

FOR SILICONES LOOK TO Linde AIR PRODUCTS COMPANY | A DIVISION OF UNION CARBIDE AND CARBON CORPORATION

General Offices: 30 East 42nd Street, New York 17, N. Y.
In Canada: Linde Air Products Company, Division of Union Carbide Canada Limited
The term LINDE is a registered trade-mark of Union Carbide and Carbon Corporation

Trane CenTraVac now in new larger sizes!

Never before these features

(1) HERMETIC CONSTRUCTION (2) FULLY AUTOMATIC OPERATION (3) STABLE OPERATION DOWN TO 10% OF CAPACITY

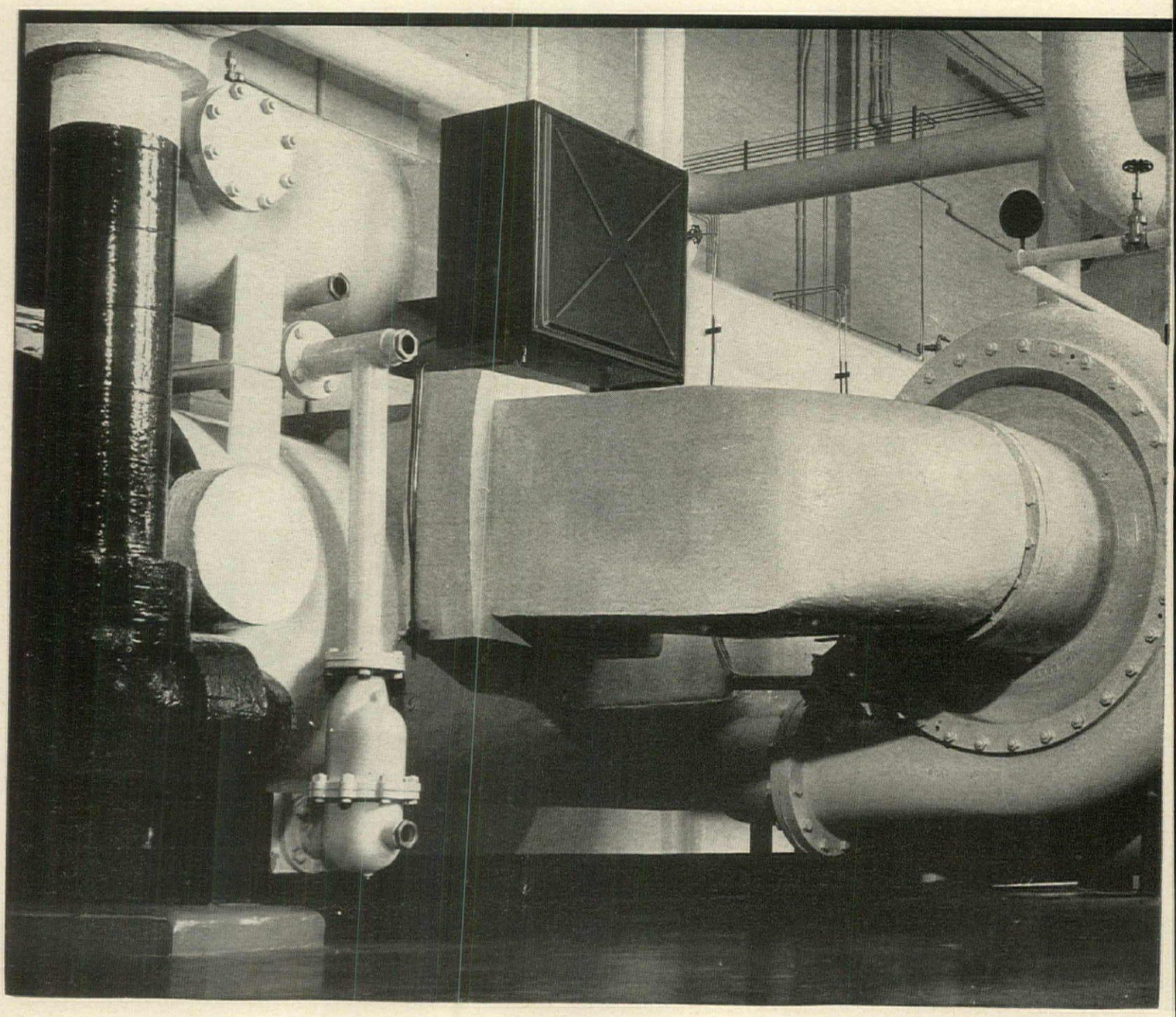
All the features of the famous Trane centrifugal that outsells all others combined!*

45 to over 800 tons water chilling capacity—in 11 basic compressor sizes!

Three completely new compressor sizes for your "big" jobs! And easier selection on *every* job because all the commonly used combinations of compressor, evaporator and condenser are covered by complete performance tables in TRANE CenTraVac literature.

In these new, larger sizes you get the same advanced features, the same efficiency and dependability that have made

*Based on Dept. of Comm. figures for units in same size range.



in water chillers to 800 tons!

TRANE CenTraVac the fastest selling centrifugal in the entire industry in its size range. For example:

True hermetic design. No shaft seals to cause Freon loss. No gear box, heavy thrust bearings and couplings to require constant attention and maintenance.

Automatic, unattended operation. No need for full time supervision. Push a button to operate . . . from there on the CenTraVac starts, stops and modulates automatically!

Modulation to 10% of capacity. CenTraVac adjusts its use of power in almost direct ratio with the cooling load—from 100% down to 10% of capacity. You can provide for partial-load operation without the usual penalty in operating costs.

Easy installation, less maintenance. CenTraVac has only *one* major moving part, only *two* main bearings . . . and operates only when full oil pressure is applied to *both* bearings. Compressor is *factory aligned*, completely eliminating this problem in the field. Operation is always smooth, vibration-free.

No multi-level base required. CenTraVac may be set directly on any level concrete floor of sufficient strength to support its weight. No foundation bolts required.

For complete information on this *complete line* of TRANE CenTraVac hermetic centrifugal compressors, call your nearby TRANE Sales Office, or write TRANE, LaCrosse, Wisconsin.



TRANE Climate Changers—full line of factory-assembled air conditioners. 600 to 29,000 cfm.

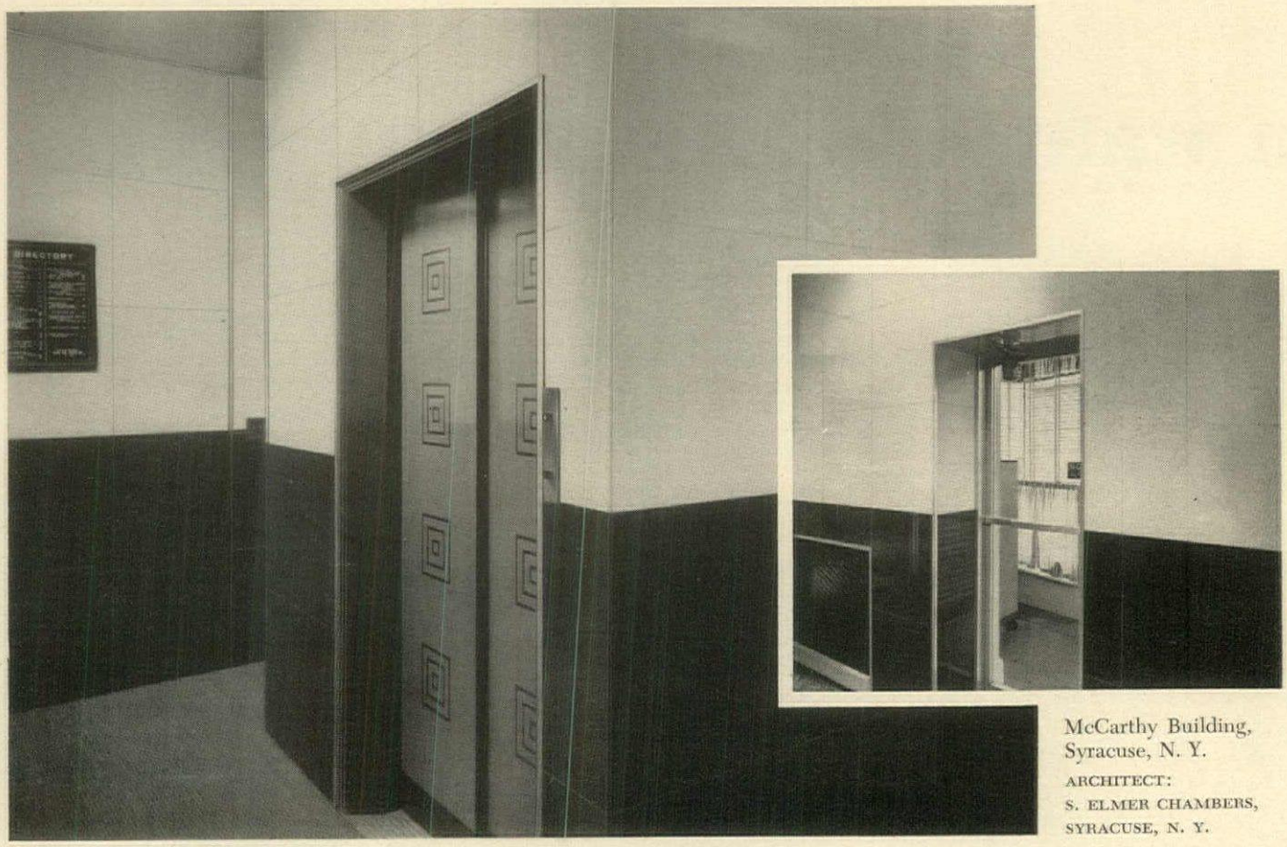
TRANE UniTrane units—for multi-room air conditioning. Free-standing, recessed or ceiling models.

TRANE

MANUFACTURING ENGINEERS

One source, one responsibility for:
Air Conditioning • Heating • Ventilating
Heat Transfer Equipment

The Trane Company, La Crosse, Wis. • Eastern Mfg. Div., Scranton, Pa.
Trane Company of Canada, Ltd., Toronto • 90 U.S. and 17 Canadian Offices



McCarthy Building,
Syracuse, N. Y.
ARCHITECT:
S. ELMER CHAMBERS,
SYRACUSE, N. Y.

Carrara® Glass ...the material architects prefer for building lobby walls

First impressions are very important —especially when it's the effect an office building lobby has upon prospective customers and clients. As the official reception room the lobby must reflect the character of the building . . . must be modern, inviting and attractive.

For this reason many architects are specifying colorful, lustrous Carrara Structural Glass to finish lobby walls in their most impressive buildings. Carrara Glass is especially suitable for this application. It is all pure glass. Its smooth, mechanically ground and polished finish has an unusually high degree of lustre and beauty that lends a note of distinction to any building. The true even joints between the large sections of Carrara create a modern, uncluttered effect. In addition, Carrara Glass is available in ten lovely colors which permit a wide range of decorative possibilities.

Because Carrara Structural Glass has a smooth finish and an even homogeneous structure, it offers no opportunity for dirt and germs to collect. It is unaffected by grease, pencil marks, odors, acid soaps and other cleaning compounds. It is very easy to clean, usually an occasional wiping with a damp cloth keeps it fresh and sparkling.

For more information on Carrara Glass, write Pittsburgh Plate Glass Company, Dept. 5362, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.

Carrara ...the quality structural glass

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS · FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

ideas

from Blickman-Built award-winning food service installations

"planned work flow" promotes kitchen staff productivity

AT BETH-EL HOSPITAL, BROOKLYN, N. Y.



COOKING SECTION, MAIN KITCHEN: Food conveyor traffic flows rapidly around this section in a counter-clockwise direction. Ample work surfaces are provided by the generously-proportioned cooks' tables. Note seamless work tops, rounded corners, welded tubular undershelves.

● Careful planning, based on work flow studies, is the key factor in the successful operation of Beth-El Hospital's food service installation. Both layout and equipment have been designed to function like a factory production line in serving approximately 50,000 meals per month. Large work areas with wide traffic aisles ensure rapid work flow and increase the productivity of kitchen labor. The modern stainless steel equipment embodies important features of utility and sanitation. These not only facilitate the overall operation, but reduce cleaning and maintenance costs as well.

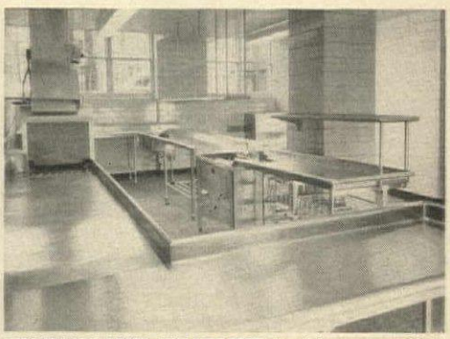
Service to patients is provided through a decentralized system. Electrically-heated food conveyors are wheeled around the island cooking section in a counter-clockwise direction. They are loaded with foods at the cooking center, bakery and finally the daily stores section. Then, they are taken to individual floor pantries where set-up trays are loaded and placed in tray carts for distribution to patients. Each floor pantry is completely equipped with short order units, refrigerators, dish storage and washing facilities.

This installation, winner of a Merit Award in a recent Institutions Food Service Contest, was designed and equipped by S. Blickman, Inc. You, too, can attain top efficiency and economy in your dietary department by installing "Blickman-Built" equipment.

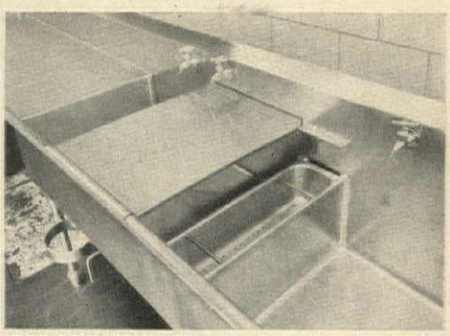


***Send for illustrated folder** describing Blickman-Built Food Service Equipment — available in single units or complete installations.*

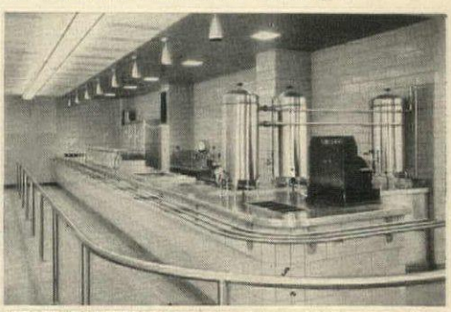
S. Blickman, 5810 Gregory Ave., Weehawken, N. J.



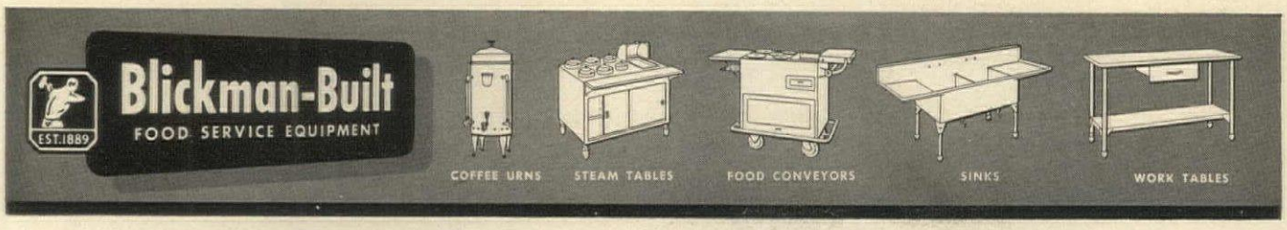
STAINLESS STEEL DISH TABLES in dish pantry. Work top and raised rolled edges form a continuous, crevice-free surface to assure maximum cleanliness.



POT SCULLERY — Close-up of round-corner stainless steel pot and pan sink. Compartments, drainboard and back splash form one continuous crevice-free surface, simplifying cleaning. The sliding tray permits placing of pots at convenient work height.



STAFF CAFETERIA accommodates visitors as well as hospital employees. Pass-through refrigerator at rear provides access to kitchen, eliminating waste motion and cross-traffic. Counter top is of stainless steel.



We welcome you to our exhibit at the National Hotel Exposition, Kingsbridge Armory, Booth No. 508, New York City, Nov. 7-11.


NEW
MODEL A55
REMINGTON STUD DRIVER
Interchangeable barrels for
¼″ and ⅜″ studs
Operator can change from one barrel to the other in seconds, right on the job! No time lost in going from medium- to heavy-duty work—no need for second tool!
A squeeze of the trigger and the job is done!
Anchoring wood furring to steel . . . steel angle to concrete
Compact tool can be used overhead, in tight places—anywhere a man can go. No outside power source required!

tool cuts costs on all stud fastening jobs!

with the Double-Duty REMINGTON STUD DRIVER

You can anchor both ¼" and ⅜" studs in steel or concrete... instantly!

ere's the first cartridge-powered tool that can cut our costs on practically all construction fastening—ght, medium and heavy duty. It's the new Model 55 Remington Stud Driver!

The secret of this amazing versatility lies in the ol's construction. *Two* sizes of studs can be used—4" and ⅜". Changeover in barrels takes only 90 conds *right on the job*. With either size, an operator an set up to 6 studs per minute . . . anchor conduit ips, wood sections, steel frames and many more xtures with a squeeze of the trigger!

What powers the Stud Driver? Remington 22 and 2 caliber cartridges for the ¼" and ⅜" studs spectively. For special medium-duty applications, ne smaller cartridge may be used with the larger stud, giving an extra-strong fastening at a saving. Every stud is driven arrow-straight, whatever the combination.

GET ALL THE FACTS about this new, useful fastening tool that goes anywhere, works anywhere—without wires or cables, hammering or predrilling. The Model 455 Remington Stud Driver makes the toughest fastening job a one-man, one-tool job and saves you time and money with every application! Just clip the coupon below for full details.

"If It's Remington—It's Right!"

Remington DUPONT

MAIL THIS COUPON TODAY!



Industrial Sales Division
Remington Arms Co., Inc., Bridgeport 2, Conn.

Please send me your free booklet which shows where and how to use the cost-saving Remington Stud Driver fastening method.

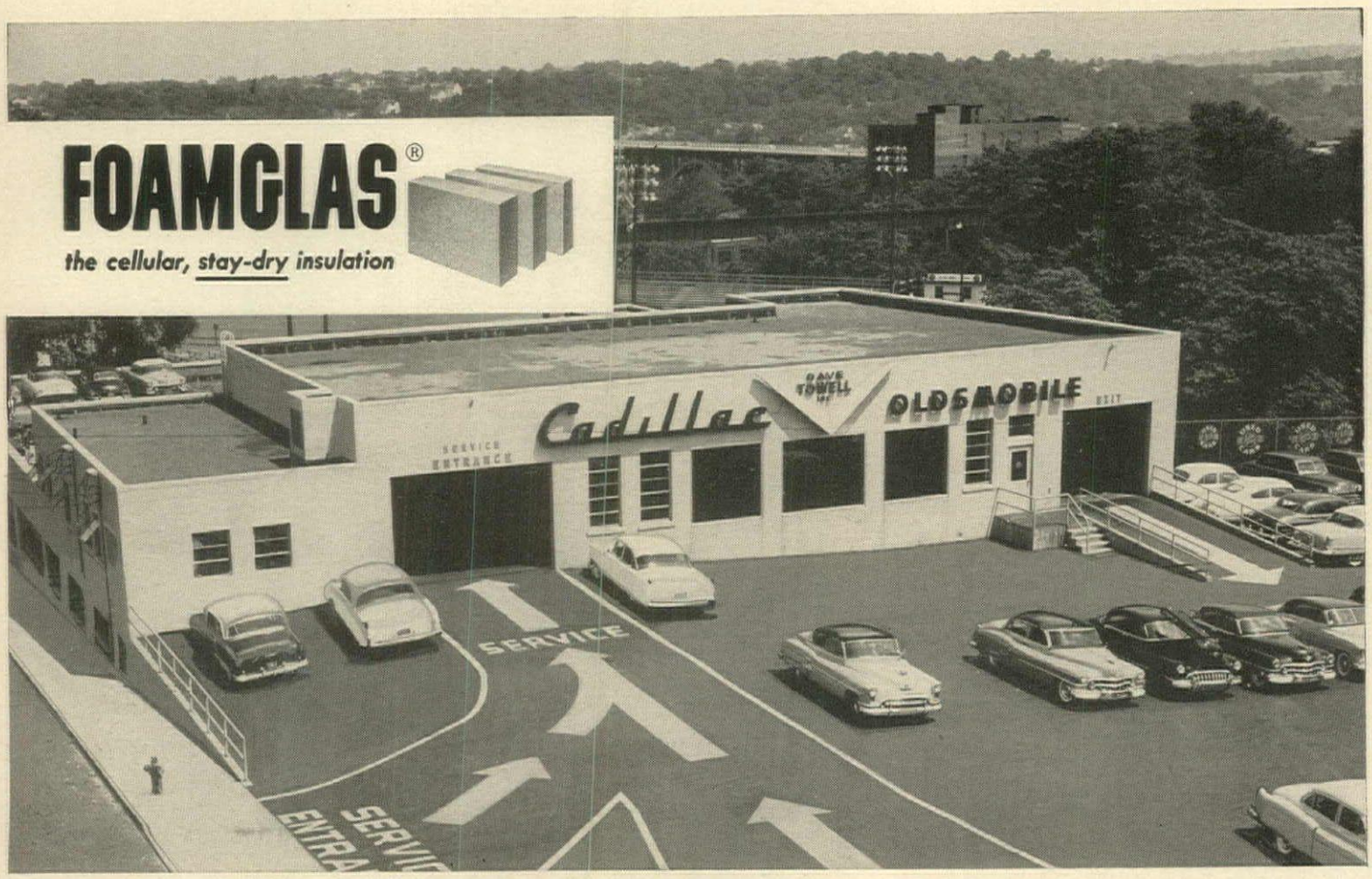
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City_____ State_____

AF-10



"Strong, stay-dry FOAMGLAS roof insulation makes rooftop parking practical"

reports Dave Towell Cadillac—Oldsmobile Agency, Akron, Ohio

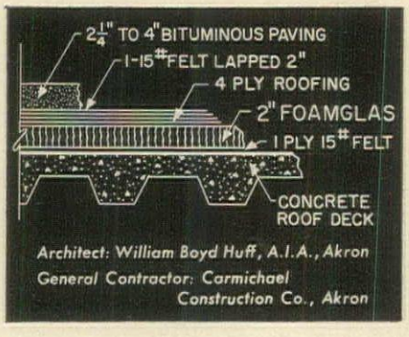
The Dave Towell Cadillac-Oldsmobile Agency, Akron, Ohio wanted to use the insulated roof of their new Service Department building as a parking area. FOAMGLAS roof insulation, with its remarkable compressive strength of over 7 tons per square foot, made it practical.

Dave Towell relates: "Our architect told us FOAMGLAS was the *only* roof insulation strong enough to support the weight of cars parked on our roof . . . and still do an efficient insulating job. Its performance since the building was finished last year has proved he was right!

"We constantly park as many as 42 cars on our roof deck. That heavy load hasn't hurt the FOAMGLAS at all. It maintains a constant insulating efficiency that gives us real operating economy with our heating-ventilating system. Best of all, we know we'll get the same top performance year-after-year because FOAMGLAS can't absorb the moisture that ruins ordinary insulations."

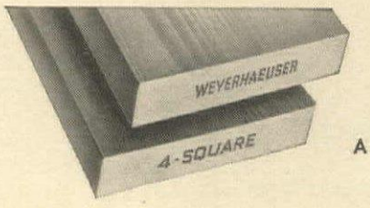
Whatever *your* insulating problems may be, you too can profit from Mr. Towell's experience. It will pay you to find out more about FOAMGLAS, the unique cellular glass insulation that will give you *all* these benefits: It *stays dry* for constant, dependable insulating efficiency . . . its great strength and light weight suit it to a wide variety of design applications . . . it's fireproof, rot-proof, acid-proof and vermin-proof. Why not write us today for a sample and our detailed literature describing the use of FOAMGLAS to insulate roofs, ceilings, walls and floors.

Pittsburgh Corning Corporation
Department D-105, One Gateway Center
Pittsburgh 22, Pennsylvania
In Canada: 57 Bloor St. W., Toronto, Ontario





Heavy power roller smooths out bituminous paving on roof deck. FOAMGLAS insulation underneath supports weight without crushing. ▶



THIS BRAND NAME ON LUMBER ALSO BRINGS YOU

A WIDE VARIETY OF *West Coast Hemlock Products*

★

West Coast Hemlock is versatile, too!

★



Above you see a unique application of Weyerhaeuser 4-Square West Coast Hemlock, the "Ability Wood." This modern building is finished with tongued and grooved Hemlock clear board siding—with the rough side exposed. It is creosote-stained to a dark brown.

West Coast 4-Square Hemlock is called the "Ability Wood" because it serves so dependably in a wide range of uses. This durable, kiln-dried lumber is light in weight, easy to work, and possesses desirable strength properties needed for framing and sheathing. Also, West Coast Hemlock lumber is widely known for its excellent nail-holding properties.

The beautiful light color, straight grain, even texture, freedom from pitch pockets, and remarkable paint-holding qualities contribute much to the desirability of Hemlock for ceiling, flooring, siding, molding and other finish uses.

These features explain the popularity of Weyerhaeuser 4-Square West Coast Hemlock Lumber among architects.

Ask to see this fine "Ability Wood" at the yard of your Weyerhaeuser 4-Square Lumber Dealer, or write for literature.

Weyerhaeuser Sales Company

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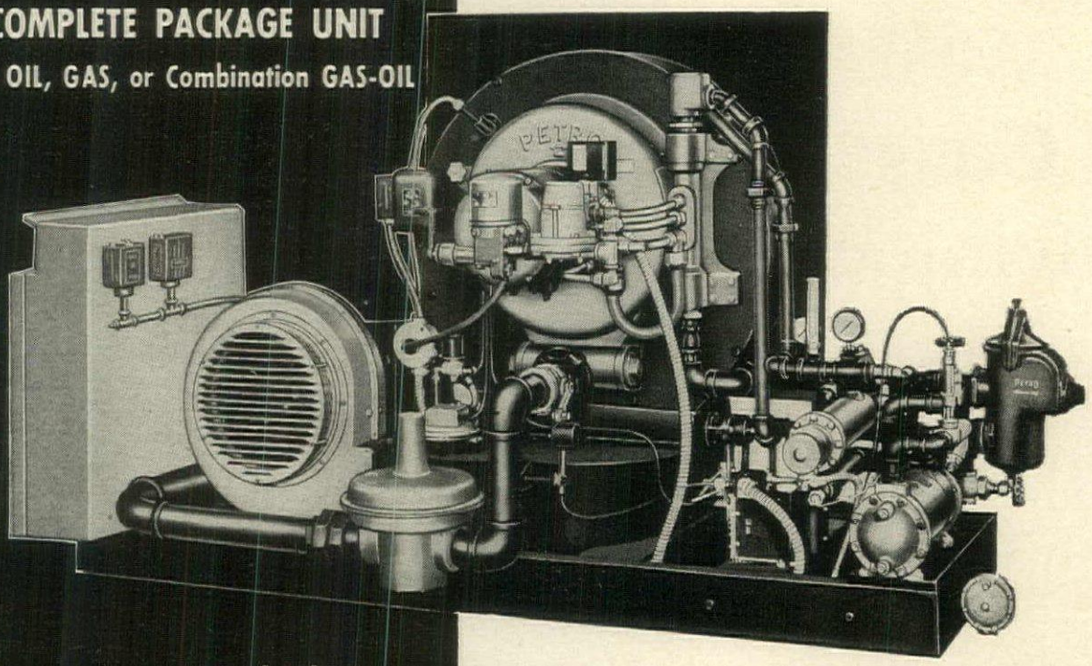
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BOOKS

SOUND INSULATION OF WALL AND FLOOR CONSTRUCTIONS. Building Materials and Structures Report 144, prepared by the staff of the Sound Section of the National Bureau of Standards. Obtainable from the US Government Printing Office, Washington 25, D.C. 66 pp. 8" x 10". Illus. 40¢

With the growing trend toward lighter, low-cost construction, many of our buildings simply cannot cope with the continuously increasing noise of today's urban conglomerations. To the architect, the result is often an unsatisfied client and a mess of time-consuming and expensive building modifications, which could have been avoided by a careful study of noise control in the initial design of the structure.

To help the harassed architect face up to the acoustic facts of midtwentieth-century life, the staff of the sound section of the National Bureau of Standards has prepared one of the most practical and concise research reports on noise control ever offered to the building industry. In 11 pp. of basic general principles and 55 pp. of sound-transmission loss tables of 277 different wall and floor panel constructions, illustrated with diagrammatic sections of the main construction systems, this reference book shows exactly what noise reduction can be expected from each kind of wall or floor construction.

For good noise control, three basic factors must be considered in the initial design of a building: 1) location—it should be oriented away from consistently noisy areas and protected from the vibrations of heavy adjoining structures such as truck routes or railroad tracks; 2) layout—quiet conference rooms, for instance, should be physically separated from noisy general offices, and mechanical equipment rooms should be placed in a basement or on special isolating supports; 3) noise transmission—airborne noise should be reduced by carefully designed partitions with special attention to wall openings such as doors, windows and ventilation ducts; impact noise should be controlled by nonhomogeneous construction and the use of rubber mounts for machinery and rubber tile or carpeted floor coverings.

The walls in a building act as diaphragms in transmitting noise. In a solid, homogeneous wall the noise transmitted is proportional to the mass (weight per square foot) of the wall, its stiffness, the rigidity of its supports and its resonance (this last is only important with low frequency sound). In contrast, a nonhomogeneous composite wall having two or more layers of different materials is considerably more effective in reducing sound transfer.

For example, furred-out plaster laid independently each side of a 4" tile wall gives it the sound transmission loss of an 8" brick wall yet it weighs only one third as much. Again, in stud walls most noise is carried through the studs themselves rather than between them, therefore the studs should be as stiff as possible, and they should be separated from the wall coverings by spring clips. Filling between the studs is valueless except where thermal insulation is desired. The sound insulation of a masonry or concrete floor is considerably improved by using a floating flooring and a suspended ceiling.

The report includes informative paragraphs on noise measurement; on the masking effects of outside noises at the threshold of hearing; and a table of recommended acceptable noise levels in unoccupied rooms, varying from 25 db. in recording studios to 55 db. in public offices and restaurants. *continued on p. 210*



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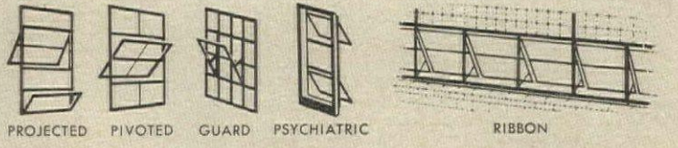
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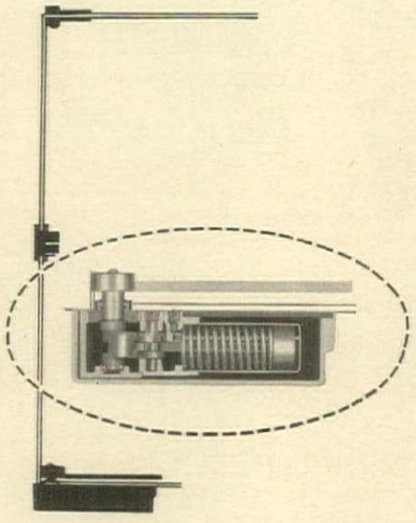
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BOOKS

Continued from p. 204

HOUSING THE AGING. By Wilma Donahue. Published by The University of Michigan Press, Ann Arbor, Mich. 280 pp. 6¼" x 9½". $3.75

This volume is a report of the University of Michigan Fifth Annual Conference on Aging which was held in Ann Arbor, July 24-26, 1952.

Housing the Aging considers the housing needs of healthy, chronically ill and infirm older people living in urban and rural areas. The question is discussed in 13 chapters by as many authors from the points of view of the private and the public builder, the financier, the social planner, the physician, and of older people themselves. Among the topics included in this book are architectural designs and costs, methods of financing, hygiene and safety standards, social and economic aspects of housing, and living arrangements and needed auxiliary services.

COMPARATIVE COST STUDIES OF SCHOOL BUILDINGS. By Clinton H. Cowgill. Published by the Virginia Polytechnic Institute, Blacksburg, Va. 42 pp. 6" x 9". Illus. 50¢

The studies indicate that there is little difference in either the capital cost or annual ownership expense between the one- and two-story buildings studied and even less expenditure difference between the investigated buildings with unilateral daylighting and those with bilateral daylighting. It does appear from the studies, however, that school buildings with single loaded corridors are significantly more expensive to build and to use than are those with double loaded corridors.

As part of the study, approximate costs of schools and estimates of annual ownership expense were calculated. Based upon average unit costs in Virginia, the average cost of the relatively inexpensive buildings studied (including land but no movable equipment) is $765 per pupil and the estimated average ownership expense with minimal financing costs is $59 per student.

ASTM STANDARDS IN BUILDING CODES. Published by the American Society for Texting Materials, 1916 Race St., Philadelphia 3, Pa. 973 pp. Heavy paper cover. 6" x 9". $6

A compilation of more than 250 ASTM specifications, methods of test and definitions of materials included by reference in the major building codes of the United States and Canada. Due to the wide variety of materials covered and the many technical committees concerned, these standards previously have been scattered throughout the 10,000-page, seven-part Book of ASTM Standards. The compilation is designed primarily for the use of building code authorities.

URBAN SOCIOLOGY. By Egon Ernest Bergel. Published by McGraw-Hill Book Co., Inc., 330 W. 42d St., New York 36, N.Y. 558 pp. 6" x 9¼". Illus. $6.50

A textbook providing a true sociology of urbanization, departing from the largely ecological or technical approach found in other texts. Although chiefly a study of contemporary urban society in the US, the book offers valuable historical and comparative analyses.

continued on p. 216

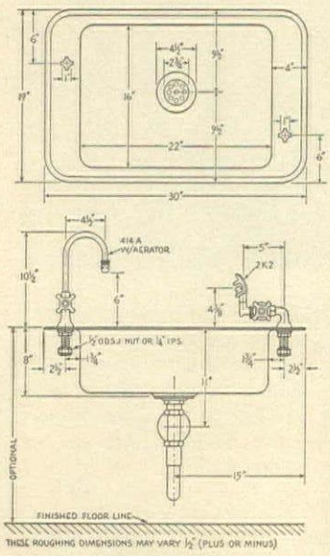
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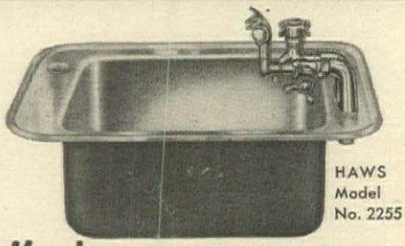


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HAWS Series 2300, Model No. 2350 (Pat. applied for)



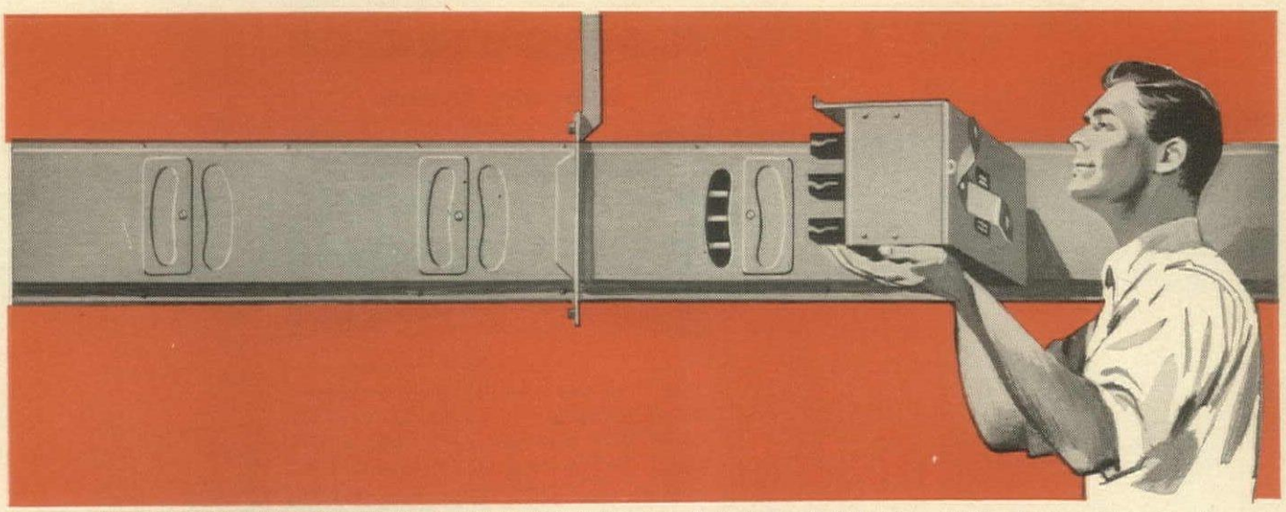
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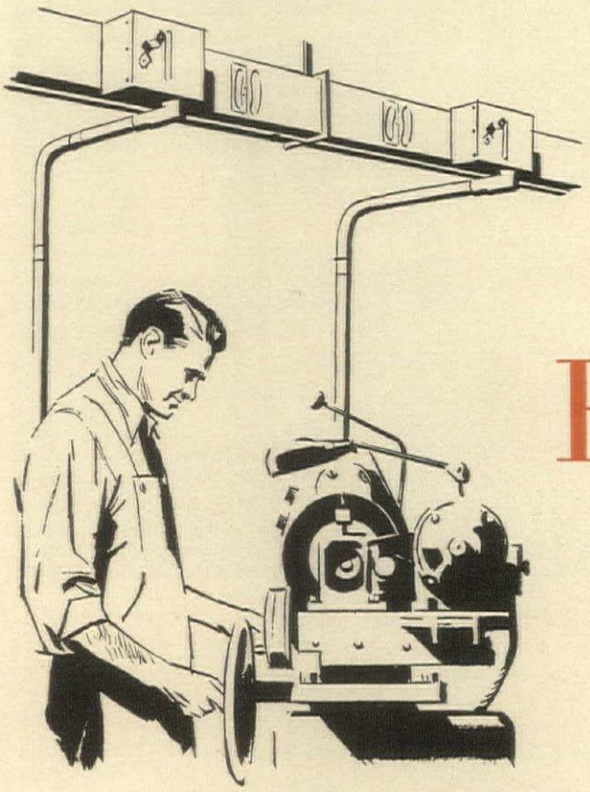
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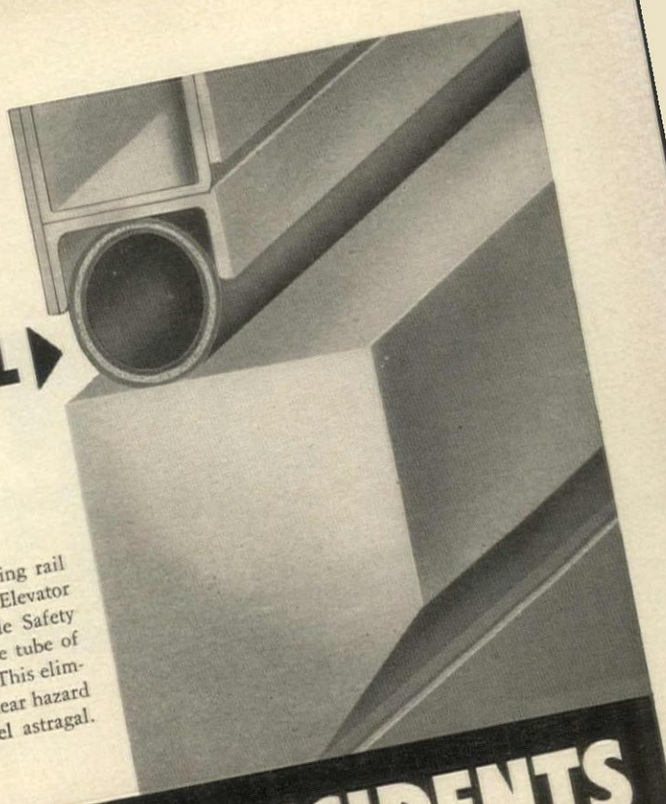
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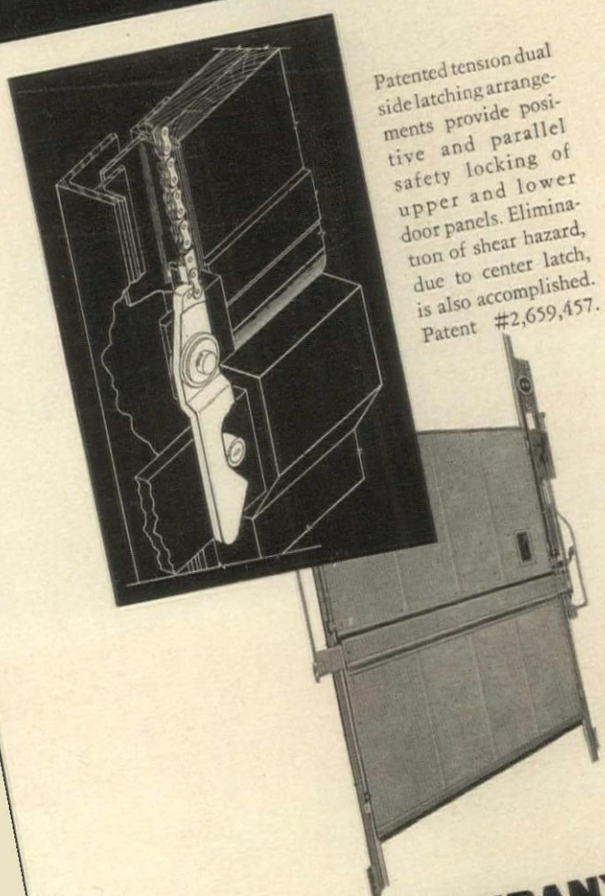
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Cross section at the meeting rail of the Peelle Freight Elevator Door showing the Peelle Safety Seal Astragal—a flexible tube of neoprene and asbestos. This eliminates the dangerous shear hazard of an overlapping steel astragal.

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Patented tension dual side latching arrangements provide positive and parallel safety locking of upper and lower door panels. Elimination of shear hazard, due to center latch, is also accomplished. Patent #2,659,457.

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Peelle Freight Elevator Doors, equipped with Peelle Safety Seal Astragals, are now being used by Eastman Kodak Company, Aluminum Company of America, United States Rubber Company, American Cyanimid Company, Goodrich Tire & Rubber Company, General Analine & Film Company, the Consolidated Edison Company and many others.

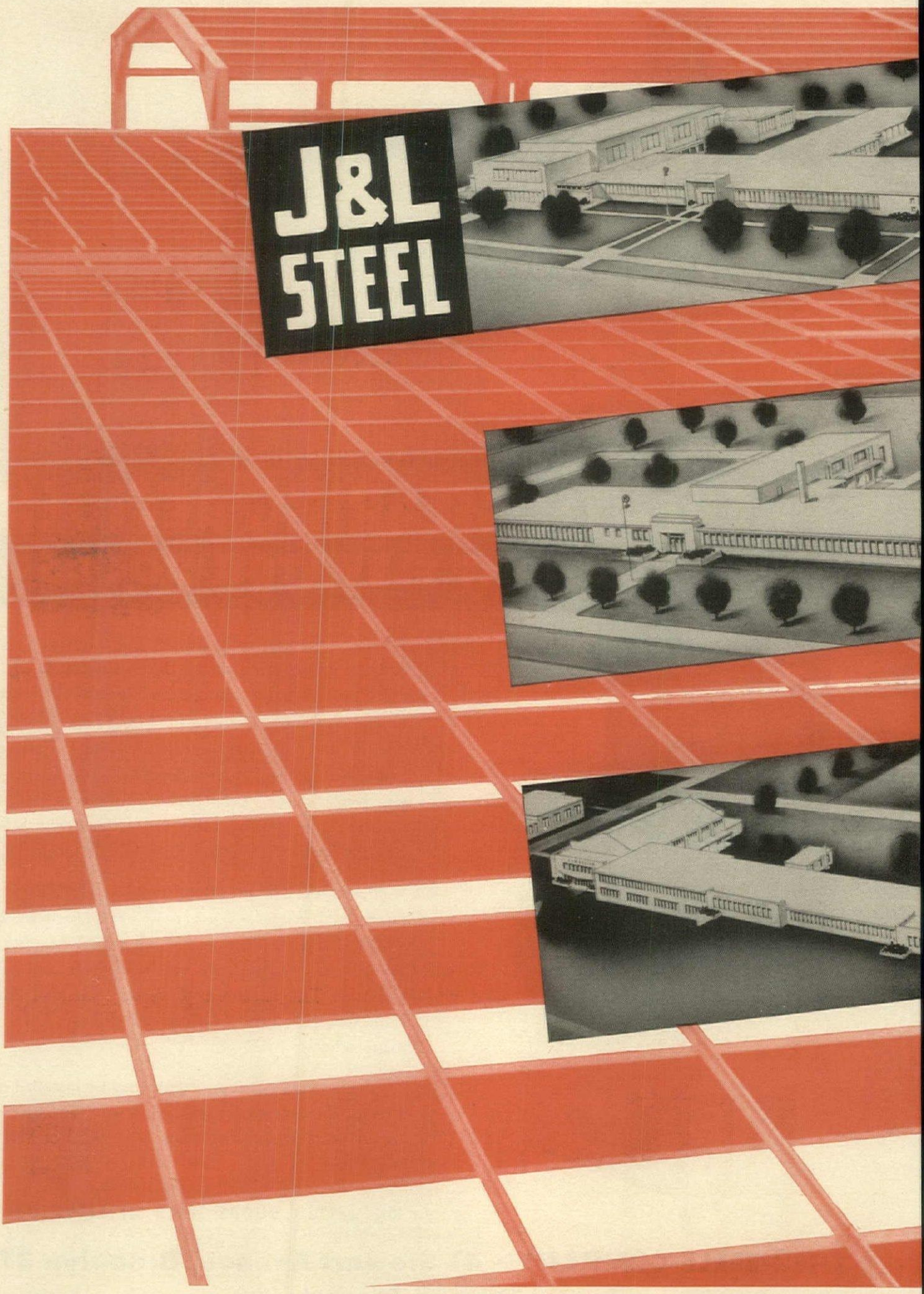
Peelle Safety Seal Astragals may be installed on Peelle Freight Elevator Doors now in use and can also be applied to any other Peelle Bi-Parting Horizontal or Vertical Sliding Doors. *Write for details.*

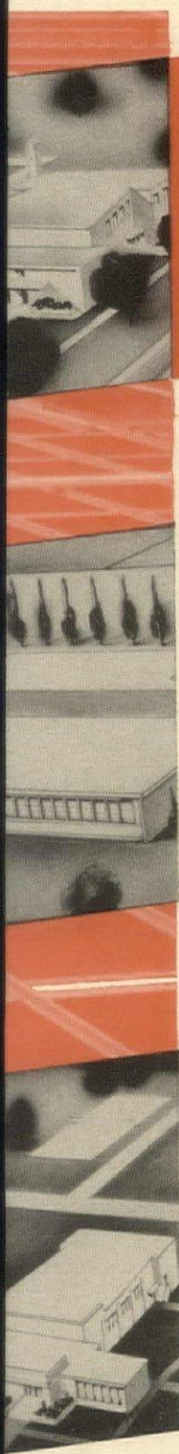
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BOOKS

Continued from p. 210

FIRE TESTS OF BRICK WALLS. By S. H. Ingberg, National Bureau of Standards Building Materials and Structures Report 143. Obtainable from the US Government Printing Office, Washington 25, D.C. 52 p. 8″ x 10″. Illus. 35¢

The effectiveness of brick walls in restricting the spread of fire depends on their stability under fire conditions and on their insulating value to prevent the ignition of combustible materials near to or in contact with the side not exposed to fire. Here is a report on fire-endurance tests of 54 solid and 19 hollow brick walls, supplemented by ten fire- and hose-stream tests, using clay, shale, concrete and sand-lime bricks of various types, both with and without lime or gypsum plaster. The standard fire test used for an average of 1,550° F. after ½ hour, 1,700° after 1 hour, and 1,850° after 1½ hours, followed by a constant rise of 75° per hour up to a maximum of 2,300° F. reached after 8 hours. Test conclusions:

- The fire-resistance of 4″ clay and shale brick walls is 1¼ hours unplastered, and 2½ hours plastered both sides; for 8″ walls the fire-resistance improved to 5 and 7 hours respectively.
- Solid 8″ and 12″ walls of concrete and sand-lime bricks have a fire-resistance 1 to 2 hours greater than similar walls of clay and shale bricks due to the greater amount of combined water in the bricks.
- Cavity walls of 10″ nominal thickness showed a fire-resistance of 5 hours, with 1½ to 2 hours as the protection period for supported combustible members, depending on the degree of embedment.

DESIGN OF BLAST-RESISTANT CONSTRUCTION FOR ATOMIC EXPLOSIONS. Prepared by C. S. Whitney, B. G. Anderson and E. Cohen for the Chief of Engineers, Dept. of the Army, Washington, D.C. Reprint 51-32, Journal of the American Concrete Institute, 18263 West McNichols Rd., Detroit 19, Mich. 94 pp. 6″ x 9″. $1.00

This study describes the methods used to design the first full-scale blast-resistant structures tested at Eniwetok in the Pacific and the test results achieved. A practical introduction gives the estimated cost and value of additional structural protection and methods for the reduction of radiation hazards.

REDEVELOPMENT FOR INDUSTRIAL USE. Technical Bull. No. 25. Published by the Urban Land Institute, 1737 K St., N.W., Washington 6, D.C. 32 pp. 8½″ x 11″. Illus. $3

A discussion of the use of redevelopment land for industry and a study of numerous case histories already on the record.

WORLD'S CONTEMPORARY HOUSES. Edited by Shinji Koike, Ryuichi Hamaguchi and Kimimasa Abe. Distributed by International Book Service Ltd., 11 two-chome, Hirakawa-cho, Chiyoda-ku, Tokyo, Japan. 101 pp. 12″ x 8½″. Illus. $6.50

A collection of excellent pictures with English (as well as Japanese) labels.

PLANNING 1954. Published by the American Society of Planning Officials, 1313 E. 60th St., Chicago 37, Ill. 212 pp. 6″ x 9¼″

Proceedings of the Annual National Planning Conference, Philadelphia, Pa., Sept. 26-30, '54.

continued on p. 222



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WET OR DRY

ALUNDUM Aggregate in Terrazzo . . . Spells Safety and Long Wear

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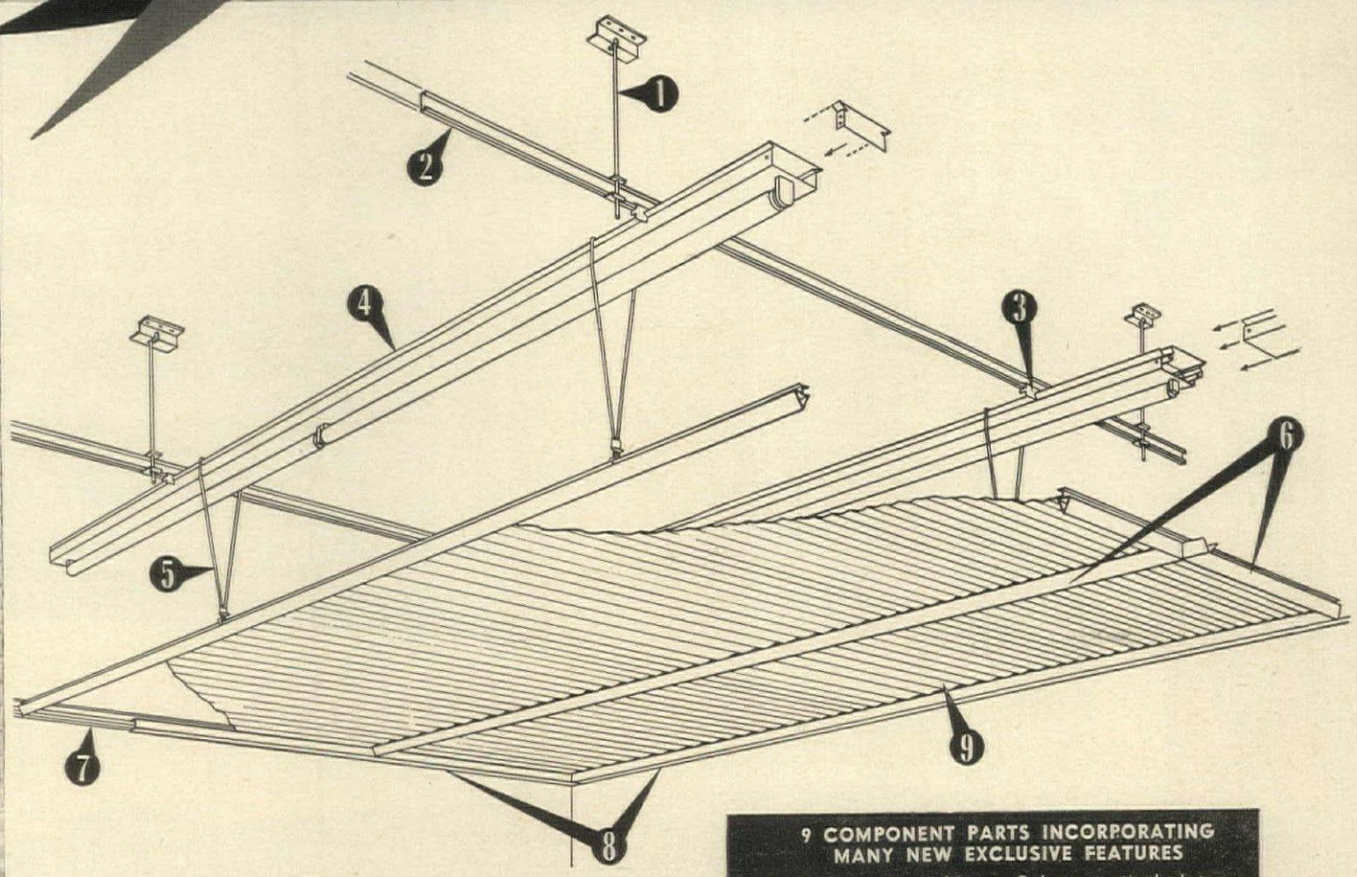
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smithcraft overall illumination

"TODAY'S GREATEST VALUE IN WALL-TO-WALL LIGHTING"



Smithcraft Overall Illumination introduces a truly "custom-made" appearance to wall-to-wall lighting. Each of the corrugated plastic modules is contained in a mitred craftsmanlike framing providing an interesting accent pattern and relief from the monotony of an unbroken expanse of shielding. Framing runners are V-shaped to reflect light and eliminate annoying black bands. The entire system glows with softly-diffused light . . . uniform, comfortable and free from shadows.

Smithcraft Overall Illumination is simple and easy to install incorporating an exclusive new levelling feature which saves hours and dollars in installation. The system is installed in new construction or in remodelling projects regardless of the irregularities of the ceiling construction or of the room and regardless of the location of pipes, ducts, beams or other obstructions.

Smithcraft Overall Illumination (we call it S.O.I.) offers so many new appearance, lighting, installation and maintenance factors you really owe it to yourself to find out more about it.

Send now for the brand new folder illustrating and describing S.O.I.

9 COMPONENT PARTS INCORPORATING MANY NEW EXCLUSIVE FEATURES

1. **Hanger Assembly** — Only part attached to ceiling . . . incorporates levelling means.
2. **Supporting channel** — Levelled by hand turning of bolts — no further levelling of system.
3. **Lighting Strip Hanger** — Slides over strip; locks to supporting channel. Location of strip may be adjusted in both directions.
4. **Lighting Strip** — Top quality Rapid-Start units with ETL — certified, Series — Sequence Ballasts. End caps become couplings in continuous rows.
5. **Runner Hangers** — Fit anywhere on strip; attach by slide fittings. Provide exact spacing — eliminate levelling difficulties.
6. **Framing Runners** — Pre-cut and mitered — lock firmly in place. V-shaped to pick up light and eliminate dark bands.
7. **Wall-channel** — Pre-cut to convenient length; no need for careful end-to-end fitting or close corner fitting.
8. **Snap-on molding** — Snap on to wall channel. Provide exact spacing for framing runners at wall.
9. **Corrugated Vinyl Sheets** — Lock in framing runners. Complies with National Building Code that these sheets shall not be over 10' in length.

Smithcraft

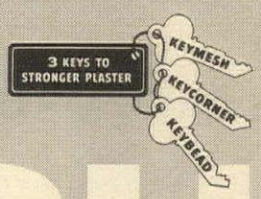
LIGHTING DIVISION

CHELSEA 50, MASSACHUSETTS

America's finest fluorescent lighting systems


why invite FIRE?
KEYMESH lath for over-all reinforcement. Made of galvanized woven wire. Especially recommended for ceiling construction.
KEYCORNER strip lath, preformed to fit snugly in corners. Lies flat when applied to joints. Galvanized to prevent rust streaks.
KEYBEAD corner lath with precision formed bead for outside corners. Open mesh assures strong, solid plaster corners.

you multiply fire resistance for pennies per square foot with



KEYMESH

Some types of walls and ceilings invite fire.

When you use lath and plaster, plus KEYMESH, you cut fire hazard immeasurably. Just compare the difference.

With frame construction, a ceiling with exposed joists is gone in 15 minutes. Finished with gypsum lath, lightweight aggregate plaster and Keymesh, it stands up an hour and 38½ minutes.

With open web steel joists, the ceiling fails in 7 minutes when joists are exposed. Add gypsum lath and 1″ of lightweight aggregate plaster over KEYMESH and the ultimate fire resistance is 4 hrs. and 26 min.

With most types of light construction you'll find that lath and plaster with KEYMESH reinforcement can make the difference between "heavy loss" and "light damage" to buildings. You can do this at negligible cost . . . for pennies per square foot of finished surfaces.

Firesafety is not the only advantage of using KEYMESH reinforcing lath. Beauty, durability, and economy must be part of everything you design. With Keymesh you get all these plus other important advantages for your clients such as lower insurance rates and complete adaptability for any type of decoration.

Before you specify or build again, weigh these facts.

Fire Test Results on various types of construction by authoritative Testing Laboratories

CEILING CONSTRUCTION WOOD JOIST FLOORS	ULTIMATE FIRE RESISTANCE	PROTECTION OF JOISTS
Exposed joists.	15 min.	None
Gypsum wallboard ½″ thick finished with casein paint.	25 min.	15 min.
Metal lath, ¾-in. sanded gypsum plaster 1:2 for scratch and 1:3 for brown coat.	45 min.	12 min.
Gypsum lath, ½-in. of gypsum lightweight aggregate plaster reinforced with **KEYMESH**-type reinforcing lath.	1 hr. 38½ min.	36 min.

WALL CONSTRUCTION ON WOOD FRAMING	ULTIMATE FIRE RESISTANCE
½″ fiberboard.	5 min.
Metal lath with ¾-in. sanded gypsum plaster.	15 min.
Tongue-and-grooved wood.	20 min.
⅜-in. perforated gypsum lath with ½-in. sanded gypsum plaster.	30 min.

CEILING CONSTRUCTION STEEL JOIST FLOORS	ULTIMATE FIRE RESISTANCE
Ceiling unprotected.	7 min.
Ceiling of gypsum lath and ½″ lightweight aggregate gypsum plaster.	55 min.
⅜″ gypsum lath covered with 1⅛″ of gypsum plaster with lightweight aggregate.	1 hr. 43 min.
Gypsum lath and ½-in. gypsum plaster with lightweight aggregate reinforced with **KEYMESH**-type galvanized reinforcing lath.	3 hrs. 28 min.
⅜″ gypsum lath, reinforced with 20-gauge, 1″ **KEYMESH**-type lath; then covered with only 1″ of lightweight aggregate gypsum plaster.	4 hrs. 26 min.

STEEL COLUMNS	ULTIMATE FIRE RESISTANCE
Structural Steel, unprotected 10 sq. in. min. area of steel.	15 min.
Gypsum lath, one layer, ⅜″ perforated, ½-in. gypsum plaster mixed with lightweight aggregate.	1 hr.
One layer ⅜-in. perforated gypsum lath, 1-in. thickness of gypsum plaster, 100 scratch, 100 brown, mixed with lightweight aggregate.	2 hrs.
Two layers ½-in. long-length gypsum lath, 1½-in. gypsum plaster mixed with lightweight aggregate. *Lath wrapped with one layer 20 gauge galvanized 1-in.* **KEYMESH**-*type reinforcing lath.*	4 hrs.

KEYSTONE STEEL & WIRE COMPANY

Peoria 7, Illinois

KEYMESH • KEYCORNER • KEYBEAD • KEYWELD
KEYSTONE NAILS • KEYSTONE TIE WIRE
KEYSTONE NON-CLIMBABLE AND ORNAMENTAL FENCE

see our CATALOG in SWEET'S FILE

Keymesh is a registered Trademark of the Keystone Steel & Wire Company

Why are factory-built cabinets best for schools?



HOMEMAKING foods laboratory and sewing room at South High School in Minneapolis, Minnesota. This installation handled by Haldeman-Homme, Inc., St. Paul 14, Minn.



FOR—Foods Laboratory
Laundry Area
Arts & Crafts
Clothing Laboratory
Sewing Laboratory
Grooming Area
Home Management Area
Child Care Area
General Storage Areas

Mutschler SCHOOL EQUIPMENT

Finest in domestic and institutional cabinetwork since 1893!

To be sure, cabinets can sometimes be built on the job for lower initial cost. But school records prove that they are far more expensive in the long run.

Schools that install Mutschler factory-built cabinetwork report it is so well built, so durable they consider it as non-depreciative as the building itself. On-the-job cabinetwork just cannot measure up to this kind of quality.

From trees felled on company-owned tracts to installed cabinetwork, Mutschler factory-built cabinets are under the careful supervision of skilled craftsmen. And more than a million dollars worth of specialized machinery is used in their fabrication. No contractor or carpenter has the time, nor the equipment, to build homemaking cabinets that give service like those made by Mutschler.

Then there is the matter of finishes. All Mutschler natural-grain cabinetwork is finished with DuPont *Dulux* . . . which cures by chemical reaction in the presence of heat and a chemical catalyst. It is extremely scratch-resistant, and is unharmed by nearly any solvent or solution. This kind of finish cannot be properly applied without factory equipment.

Also, cabinetwork should be planned for most efficient use. Mutschler sales engineers are specialists in the planning and equipping of school homemaking and foods departments, arts and crafts rooms, and storage areas. This planning help is available at no extra cost when you specify Mutschler.

Such a great number of the nation's schools have found they get more for their money with Mutschler. Why not investigate comparative costs and services before you build or remodel? Call or write your nearest sales office below.

SALES OFFICES

NORTHEAST
RAY S. SNYDER COMPANY—New York 17, N.Y.; Conn., Mass., R.I., New Jersey (North)
CARBEAU, INC.—Boston, Mass.; Maine, Vermont, New Hampshire
W. S. BALLOU—Massapequa, L.I., New York; New York City, Long Island
SCHOOL EQUIPMENT, INC.—Syracuse 3, N.Y.; New York State
AMERICAN SEATING CO.—Philadelphia 30, Pa.; Pennsylvania, New Jersey (South), Delaware

SOUTHEAST and SOUTH
SOUTHERN DESK COMPANY—Hickory, N. Carolina; Maryland, West Virginia, Virginia, North Carolina, Tennessee, Mississippi
AMERICAN SEATING CO.—Atlanta 3, Georgia; South Carolina, Georgia, Alabama, Florida
ALL STATE SUPPLY COMPANY—Little Rock, Arkansas; Arkansas

NORTH CENTRAL
HALDEMAN-HOMME—St. Paul 14, Minnesota; Minnesota
V. A. STUMP—Middleton, Wisconsin; Wisconsin
P. O. WILKIN—Dearborn, Michigan; Michigan
J. S. LATTA AND SON—Cedar Falls, Iowa; Iowa
I. P. REIGER COMPANY—Bellwood, Illinois; Illinois
BURNS SALES COMPANY—Indianapolis 8, Indiana; Indiana
KYSER SALES COMPANY—Warren, Ohio; Ohio

CENTRAL
HOOVER BROTHERS—Kansas City 6, Missouri; Nebraska, Kansas, Missouri (Western)
CENTRAL SCHOOL SUPPLY CO.—Louisville, Kentucky; Kentucky
LEN A. MAUNE CO.—St. Louis 17, Mo.; Missouri (Eastern)

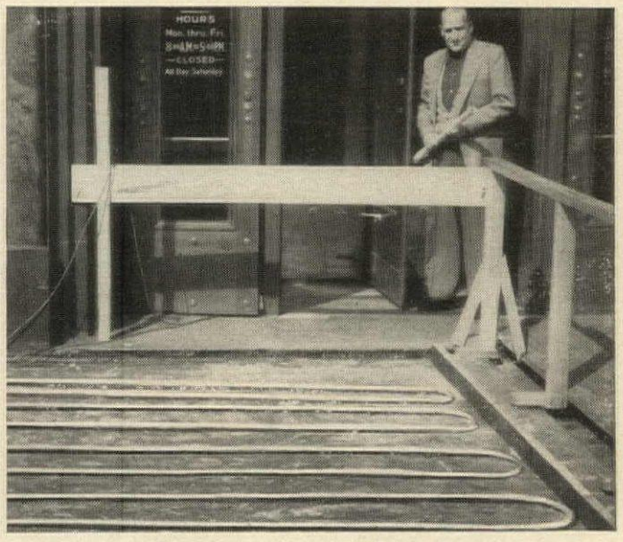
SOUTHWEST
W. C. HIXSON COMPANY—Dallas 2, Texas; Louisiana, Oklahoma, Texas, New Mexico
PBSW SUPPLY COMPANY Phoenix, Arizona; Arizona

WEST
AMERICAN SCHOOL SUPPLY CO.—Denver 2, Colo.; Colorado, Wyoming (Eastern)
HULL EQUIPMENT COMPANY—Salt Lake City 3, Utah; Nevada, Idaho, Wyoming (Western), Montana
AMERICAN SEATING CO.—Los Angeles 3, California; California (Southern)
AMERICAN SEATING CO.—San Francisco 24, California; California (Northern)

NORTHWEST and OTHERS
MUTSCHLER BROTHERS CO.—Nappanee, Indiana; Oregon, Washington, North Dakota, South Dakota, Illinois (Southern)
TOM DEWEY & COMPANY—Lanikai, Hawaii; Hawaiian Islands



Leak-free joints made easily with torch and solder.



Section of system ready for paving.

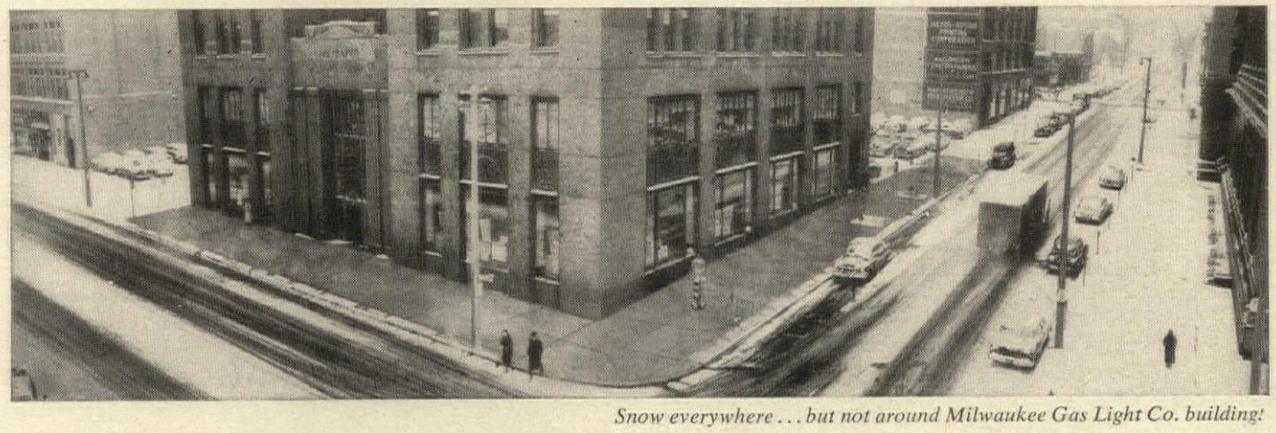
Milwaukee Gas Light Company

MAKES SNOW GO

with Chase Copper Water Tube!

Blizzard snows and freezing rain don't stand a chance around 626 East Wisconsin, in Milwaukee! The Milwaukee Gas Light Company's sidewalks are always free of snow and ice—thanks to an efficient snow removal system of Chase copper tube!

The contractor, John S. Jung, used both Chase Type L copper tube and Chase copper solder-joint fittings in the installation. This combination is unsurpassed for easy, fast installation plus trouble-free performance over the years! You see, corrosion-resistant Chase copper tube comes in long lengths that are easily bent into position and require fewer joints. Tube and fittings are *made for each other,* so leakproof solder-joints are assured. They expand and contract *as one unit* with temperature changes!



Snow everywhere . . . but not around Milwaukee Gas Light Co. building!

Chase®

BRASS & COPPER CO.

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

The Nation's Headquarters for Brass & Copper (†sales office only)

Albany†	Chicago	Detroit	Los Angeles	New Orleans	Rochester†
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Baltimore	Cleveland	Houston	Milwaukee	Philadelphia	San Francisco
Boston	Dallas	Indianapolis	Minneapolis	Pittsburgh	Seattle
Charlotte†	Denver	Kansas City, Mo.	Newark	Providence	Waterbury

BOOKS

Continued from p. 216

THE ARCHITECTURAL INDEX FOR 1954. Compiled and Edited by Ervin J. Bell, architect. Published by The Architectural Index, 5532 South Kenwood Ave., Chicago 37, Ill. 39 pp. 5¼" x 8½". $4

A handy three-way index (geographical, by subject and by architect) to the editorial contents of these seven magazines: *Arts and Architecture*, ARCHITECTURAL FORUM, *Architectural Record*, *Bulletin of the American Institute of Architects*, HOUSE & HOME, *Interiors* and *Progressive Architecture*.

ITALY'S ARCHITECTURE TODAY. By Carlo Pagani. Published by Ulrico Hoepli, Milan. 290 pp. 9" x 11". Illus. About $9

A handsome account of postwar Italian building with text and captions in English as well as Italian.

CHURCH ARCHITECTURE IN NEW FRANCE. By Alan Gowans. Published by Rutgers University Press, New Brunswick, N.J. 162 pp. 7" x 10½". Illus. $8

Aside from the main theme of stylistic development in Quebec church architecture, the book supplies information about methods of construction, parish organization, governmental administration, texts of building contracts, etc., under the *ancien régime* in Canada.

Other books received

THE JAPANESE HOUSE AND GARDEN. By Tetsuro Yoshida. Published by Frederick A. Praeger, 105 W. 40th St., New York 18, N.Y. 203 pp. 8½" x 11". Illus. $12.50

ENGINEERING PROPERTIES OF SOILS. By R. H. Karol. Published by Prentice-Hall, Inc., 70 Fifth Ave., New York 11, N.Y. 82 pp. plus data sheets. 8½" x 11". Illus. $3.50

ENGINEERING MECHANICS. By Archie Higdon and William B. Stiles. Published by Prentice-Hall, Inc., 70 Fifth Ave., New York 11, N.Y. 585 pp. 6" x 9¼". Illus. $7.95

MUSIC BUILDINGS, ROOMS AND EQUIPMENT. Published by the Music Educators National Conference, 64 E. Jackson Blvd., Chicago 4, Ill. 96 pp. 9" x 12". Illus. $4.50

DIRECTORY OF COMMERCIAL AND COLLEGE TESTING LABORATORIES. Published by the American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. 48 pp. 8" x 10½". Paper cover. $1

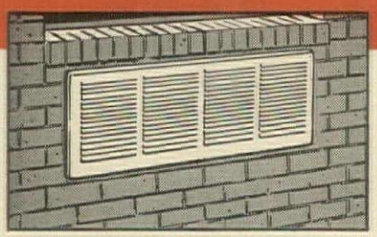
SYMPOSIUM ON METHODS OF TESTING BUILDING CONSTRUCTION. Published by the American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. 136 pp. 6" x 9". Heavy-paper cover. $2.75

REGION BUILDING. Community Development Lessons from the Tennessee Valley. By James Dahir. Published by Harper & Brothers, 49 E. 33rd St., New York 16, N.Y. 208 pp. 5½" x 8¼". Illus. $3.75

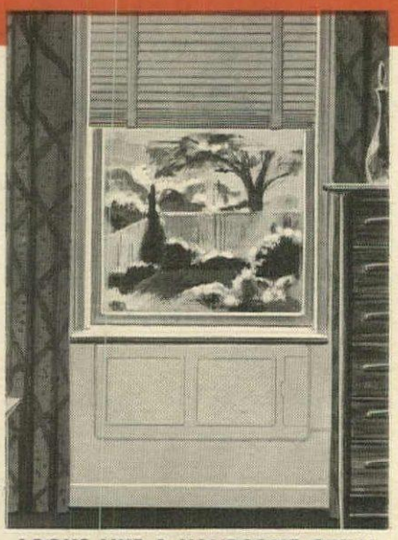
ELEMENTARY PLANE SURVEYING. New third edition. By Raymond E. Davis. Published by McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N.Y. 507 pp. 5½" x 8¼". Illus. $5.50

HOW TO ESTIMATE FOR THE BUILDING TRADES. Enlarged edition. By Townsend, Dalzell & McKinney. Published by American Technical Society, 848 E. 58th St., Chicago 37, Ill. 699 pp. 5½" x 8¼". Illus. $6.75

AT LAST! a BUILT-IN air conditioner with NO UNSIGHTLY "OVERHANG" INSIDE or OUT!



NEAT OUTSIDE GRILL—nothing to mar beauty, no unsightly "overhang" inside or out!



LOOKS LIKE A HANDSOME GRILL! Can be installed in *one* room or *every* room in any type of construction!

revolutionary low-cost

LEWYT

BUILT-IN wall air conditioner

NOW! DESIGN BUILT-IN AIR CONDITIONING INTO HOMES, APARTMENTS, HOTELS, ETC., FOR...

- Less than the cost of window units!
- Less than HALF the cost of a central system!

NOW, LEWYT brings you a totally new concept of BUILT-IN air conditioning! Each unit is complete in itself, fits into any outside wall. Only 15" deep, there's no unsightly "overhang" inside or outside to mar the architectural beauty of your design! There are no ducts, no "window problems!"

ONLY LEWYT HAS ALL THESE BIG "EXTRAS!"

- Sold direct from factory to builder!
- Only 15" deep, 14⅝" high, 32 7/16" wide!
- Individual 2-speed control and built-in thermostat!
- Quiet! Choice of cooling capacities!
- 5-year warranty! UL approved!
- Reverse-cycle pump for heating—optional!

Write today for specifications and full details!

LEWYT AIR CONDITIONER CORPORATION • 57th St. and 1st Ave., Brooklyn 19, N. Y.

There are good reasons why...





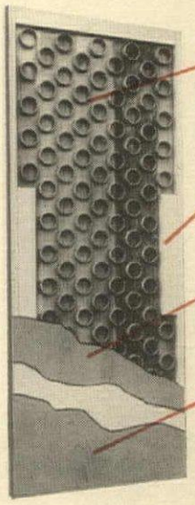
. . . the SANS SOUCI selected

GENERAL PLYWOOD Doors for both interior and exterior use

It's not surprising that the Sans Souci, one of Miami Beach's most spectacular luxury hotels, selected General Plywood flush doors to enhance the beauty of the decor for which it is famous. General doors come in a wide variety of grain patterns of both domestic and foreign woods enabling the architect to achieve striking and imaginative effects.

Not surprising either was the selection of General exterior doors for the Cabana Club area. Here the builders faced a situation where wood doors had to stand up under the most extreme climatic conditions brought about by sun, wind and moisture. In this installation General Plywood's engineered seven-ply construction has justified the confidence of the builders in every respect.

Specify General on your next job and be sure!



COLUMN CORE CONSTRUCTION
Cylindrical fibre columns—strongest lightweight structural form known—are used to insure combined *lightness and strength.*

TWO LOCK BLOCKS
Wide lock blocks on both sides provide *ample space for lockset*—eliminates possibility of *hanging error.*

3-PLY BALANCED PANELS
Center ply thickness is balanced with the combined thickness of two outer plies, assuring *utmost rigidity and resistance to warping.*

GREATER BEAUTY
The smooth, hard, cabinet-maker's finish is produced by an extra sanding operation on huge belt sanders. *Faster and finer finishing on the job.*

OVER 50 YEARS
IN HARDWOOD PLYWOOD

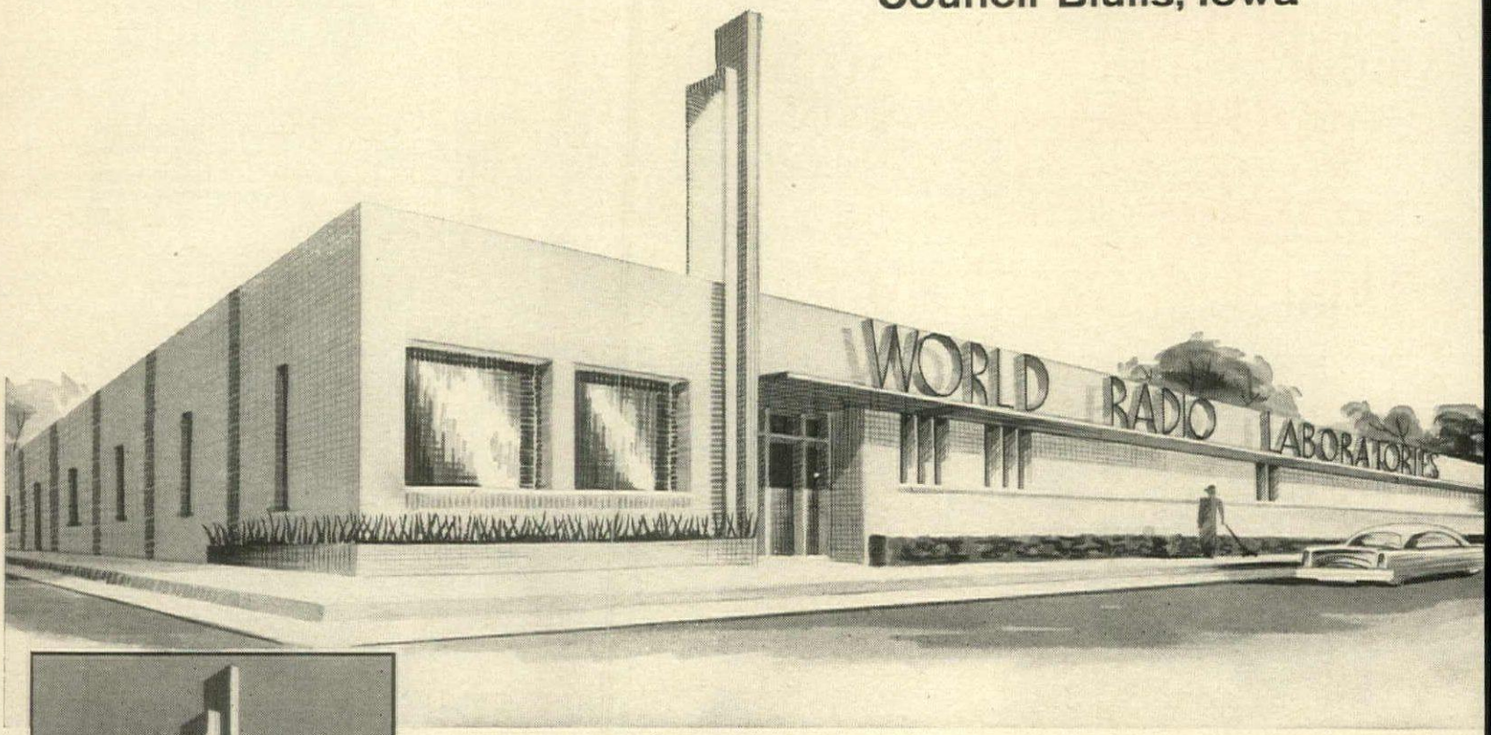
GENERAL PLYWOOD
CORPORATION
LOUISVILLE, KENTUCKY

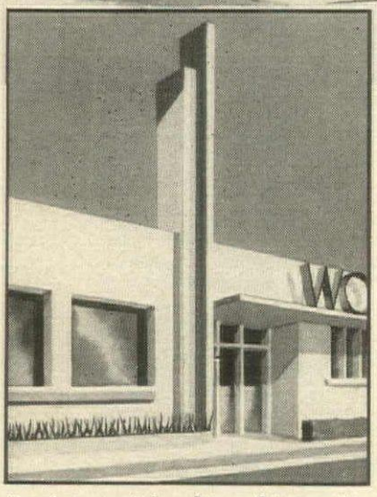
Westinghouse Salutes

An Architectural Achievement

New Headquarters of World Radio Laboratories

Council Bluffs, Iowa





By day or night, the striking unity of sign and lighting effects highlights "The World's Most Personalized Radio Supply House." Located on all transcontinental highways through the city, the site has more than an acre of parking space for customers, plus room for future expansion.

CONGRATULATIONS TO ARCHITECT *Robert C. Robinson*

His design for this all-masonry and steel building provides most efficient operation of World Radio Laboratories' internationally known, world-wide business.

30,000 square feet of air conditioned floor space — on a single level — house an electronics super-mart, hi-fi, an operating ham radio shack, and business offices. There are also receiving, manufacturing and shipping areas with over two miles of stock shelves. Employees have their own lunch room with kitchen facilities.

To complement this plan for progressive efficiency and comfort, architect Robinson naturally specified Westinghouse Water Coolers.



WSB3B
3-Gallon
Bottle Cooler



WS5B
5-Gallon
Static Air Cooled



WS8B
8-Gallon
Static Air Cooled



WA13B
13-Gallon
Fan
Air Cooled



WA17B
17-Gallon
Fan
Air Cooled



WW14B
14-Gallon
Water Cooled



WW20B
20-Gallon
Water Cooled

Architect ROBERT C. ROBINSON made sure with

Westinghouse Water Coolers

– specified by an ever-increasing number of architects and construction engineers throughout the country. And, to continue to merit this approval, Westinghouse builds even greater efficiency, dependability into every new water cooler.

Leak Proof Water Valve

– The new solenoid water valve has no stem packing to leak, no moving parts to wear out. The entire water system is completely sealed in . . . for years of maintenance-free service. Automatic Stream Height Regulator assures no spurt, no splash, no dribble – regardless of changes in water pressure.

Dual Electric Control

– Only Westinghouse offers the convenience of both finger tip and toe tip bubbler control at no extra cost . . . with electrically operated solenoid water valve that ends valve stem packing and leaks and reduces maintenance costs.

Full Line

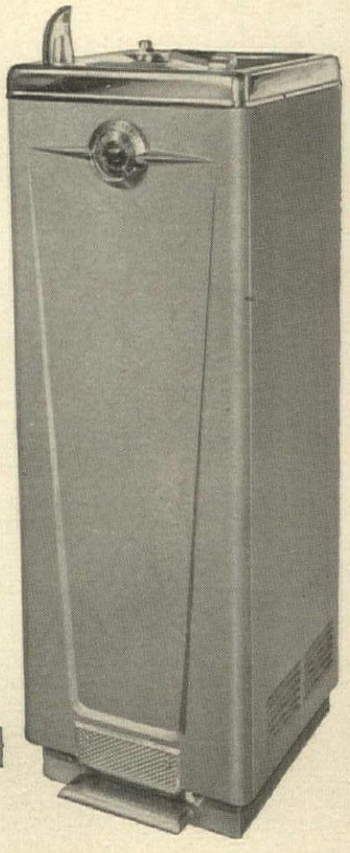
– 13 coolers to choose from, with capacities from 1 to 20 gallons in bottle and pressure types, including compartment, air cooled, water cooled and explosion-proof models, all distinctively styled with polished metal trim, attractive silver-gray hammered finish and capped with a sanitary stainless steel top. And *all* are backed by the famous Westinghouse 5-Year Guarantee Plan.

FREE WESTINGHOUSE PAY-WAY COMPUTER

The Westinghouse Pay-Way Plan spotlights a hidden drain on productivity, and *profit!* Regardless of the type of firm you have – factory, office, store – this Plan shows you how to *stop* needless waste.

To determine *your* savings under the Pay-Way Plan, Westinghouse offers this handy, FREE Computer. Call your Westinghouse Water Cooler Distributor today. He's listed in the Yellow Pages of your telephone directory. Or drop us a line!





YOU CAN BE SURE... IF IT'S Westinghouse

WESTINGHOUSE ELECTRIC CORPORATION

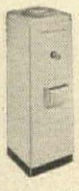
Electric Appliance Division • Springfield 2, Mass.



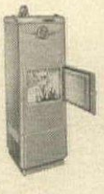
WSE8B
8-Gallon
Static Air Cooled
Explosion-Proof



WWE14B
14-Gallon
Water Cooled
Explosion-Proof



WSBW-2
2-Gallon
Home Water Cooler



WSC2
Compartment
Pressure Cooler



WSBC1
Compartment
Bottle Cooler

Intercommunication Planning Kit... Send for your FREE copy



have all the facts
— right at your elbow —
when you need them



with

Select-O-Phone

DIAL INTERCOMMUNICATION SYSTEMS

Kellogg's architectural planning kit contains all the basic information and data required for planning inter-communication systems for every business need and budget. This handy reference file is yours for the asking. Or, if you prefer, a representative from our Nation-Wide dealer organization will be happy to work with you directly in surveying your client's present and future "inside" communication requirements.



SELECT-O-PHONE

Executive Station—Dials and rings automatically at touch of a push-button. No talk-listen switches to manipulate. Choice of solid oak, walnut and mahogany.

KELLOGG division of IT&T

INTERCOMMUNICATION SYSTEMS
The INSIDE Voice of Business

KELLOGG SWITCHBOARD AND SUPPLY COMPANY
A Division of International Telephone and Telegraph Corporation

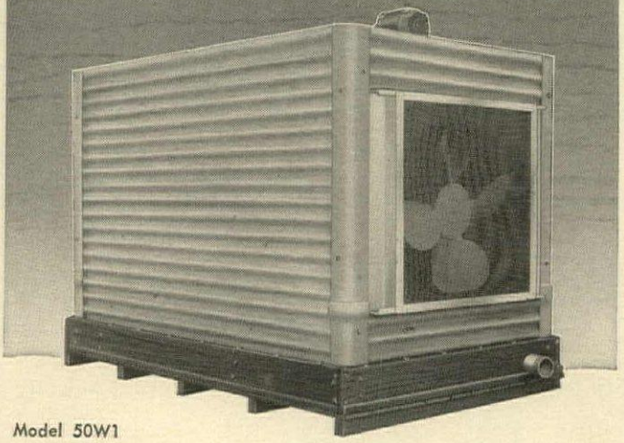
KELLOGG SWITCHBOARD AND SUPPLY COMPANY
Commercial Products, Dept. 76-J
79 West Monroe Street, Chicago 3, Illinois
Send me your free INTERCOMMUNICATIONS ARCHITECTURAL PLANNING KIT.

Name_____
Company_____
Address_____
City_____ Zone_____ State_____

NEW *forced draft*

WOOD AQUATOWERS*

for longer life when the going is tough



Model 50W1

Marley offers a new series of cooling towers specifically designed to combat corrosive atmosphere and water . . . to "go the full distance" under the most rigorous operating conditions.

All-redwood structure and heavy asbestos cement board or wood casing—both impervious to corrosion — are a positive guarantee of prolonged service life. In the Marley forced draft design the fan and mechanical equipment have the advantage of being out of the discharge air stream.

But regardless of your climate, there will be times when you'll specify these new towers because of their attractive appearance and their unique adaptability to almost any location. Because air discharge is vertical, wind direction is not a factor in locating Forced Draft Wood Aquatowers. Smaller models are factory assembled and the larger models can be hoisted on standard freight elevators because they are shipped disassembled.

New Forced Draft Wood Aquatowers are available in 10 models for services from 3 to 50 tons. Ask your nearby Marley Sales Engineer for a copy of Bulletin FDWA or write direct to Marley, world's leading producer of cooling towers for air conditioning and refrigeration.



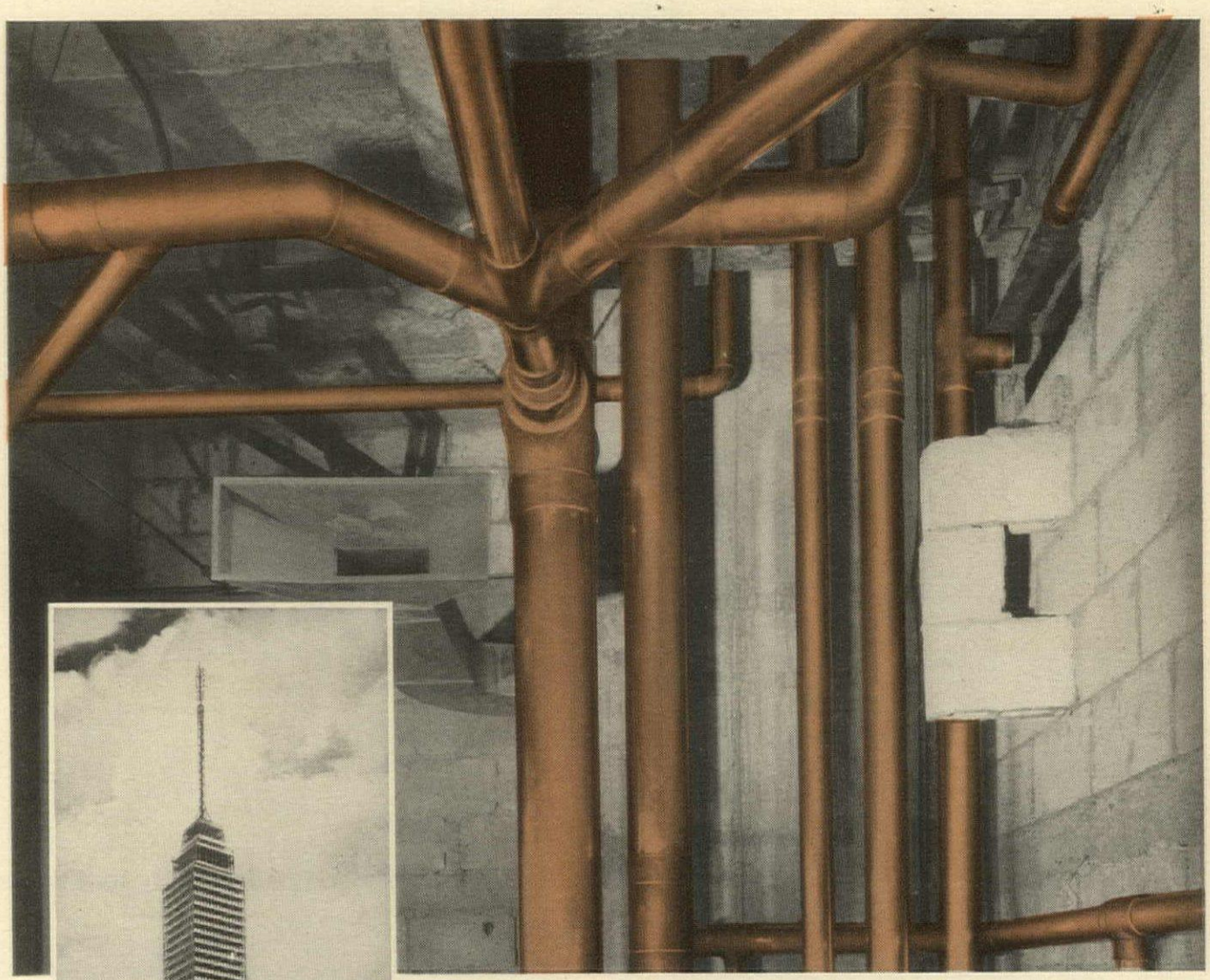
U. S. Patent Pending; patents granted in seven foreign countries.

Model 5W2

MARLEY

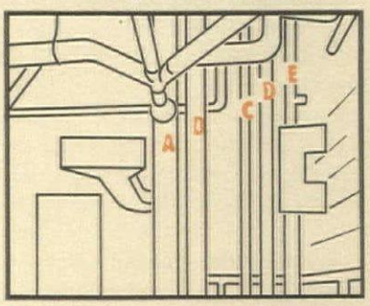
The Marley Company

Kansas City, Missouri



Main pipe shaft. Note compact assembly made possible by the trim, space-saving copper tube and fittings. See pipe sizing diagram below, left.

Mexico's newest and tallest skyscraper. General Director: Adolfo Zeevaert, C. E. Constructed by the Engineering Department of "La Latino Americana, Seguros de Vida, S. A." Plumbing contractor, Técnica, S. A.



A. 8" soil stack. B. 6" vent. C. 3" hot water. D. 4" cold water. E. 3" waste for future use. Laterals to soil stack are 4". All sanitary drainage lines are Type M.

43-Story all-copper plumbing . . . in Mexico's tallest building

COPPER | **hot and cold water lines**
sanitary drainage system
roof drainage lines

100,000 pounds of copper tube, Types K, L and M, provide lasting protection against rust in the plumbing system of this beautiful, ultra-modern office building of the Latino Americana Insurance Company, Mexico City. Tube sizes ranged from ½" to 12" incl. Anaconda tube was used throughout, with Nacional de Cobre of Mexico furnishing the smaller sizes.

For a skyscraper or a small home, copper tube plumbing saves installation time and effort . . . often the over-all cost is less. Its light weight makes it easy to handle. Standard 20' lengths eliminate many joints. Assembly work with solder-type fittings is quickly and easily accomplished.

For economical, non-rusting plumbing specify ANACONDA Copper Tubes and ANACONDA Solder-Type Fittings. A wide range of sizes are stocked by Anaconda distributors throughout the country. Descriptive literature is available. Write to *The American Brass Company, Waterbury 20, Conn.* In Canada: *Anaconda American Brass Ltd., New Toronto, Ontario.* 5511

for copper tubes see your

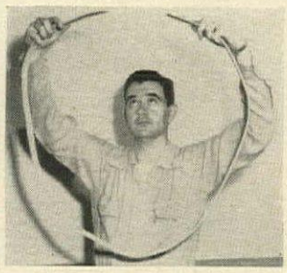
ANACONDA®

distributor

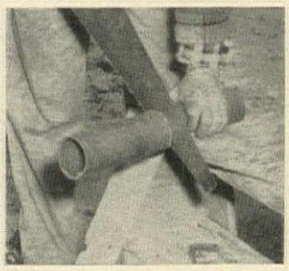
PRODUCTS



Tubular aluminium just for fun.....p. 272

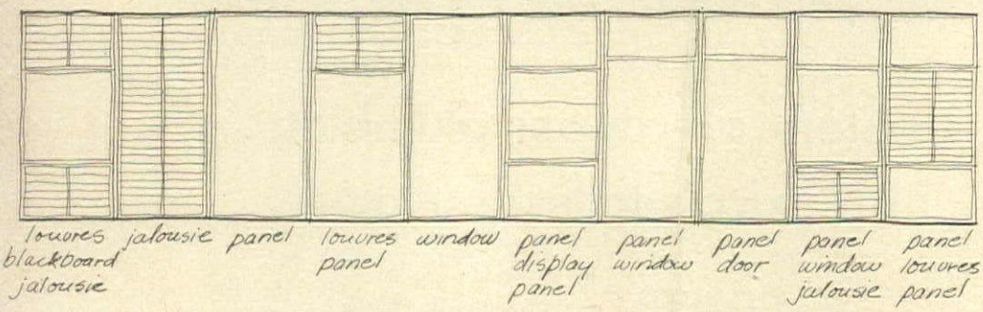


Elastic band of concrete.....p. 264



Sawed-off cores for conduit.....p. 240

Preassembled school walls delivered ready to attach to framing

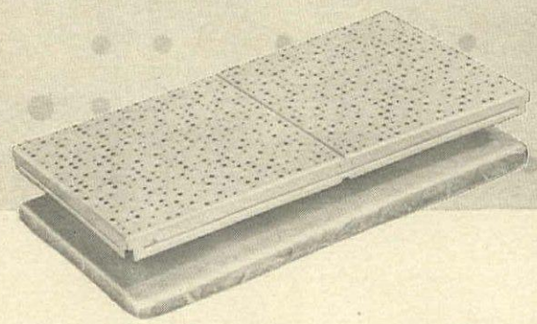




As long as pupil population outruns school construction, any product that promises speedy, economical school building will find a receptive market. And as more architects, from expediency, work with modular prefab components such as the *Arnold School Wall Panels*, they soon find standardization not a harness but a tool. Numerically, the different ways in which Arnold's stock inside and outside skins, cores, window door and jalousie arrangements can be combined exceed 10,000. But more than a mix-and-match plaything for the designer, the 4'-wide curtain panels make it possible to order, from an assembly line, complete walls that are attractive, durable, easy to maintain, and fulfill the physical requirements of belonging to a school building. Bulletin boards, peg boards, chalkboards—even chalk troughs of extruded aluminum and display cases are set in the panel frame as specified at the factory. Ducts for heating and cooling, electrical raceways or outlet boxes are also provided. Outside finishes include porcelain enamel on aluminum or steel; mill finish, anodized, or alumilited aluminum; stainless steel; and asbestos cement board. Cores of resin-impregnated paper honeycomb and foamed glass are used for their stiffening value as well as their insulation.

continued on p. 232

Announcing GOLD BOND RANDOM PATTERN ACOUSTIMETAL



Wherever metal acoustical ceilings are indicated, you can add distinctive good looks with new Gold Bond Random Pattern Acoustimetal. It's easy on the eyes *and* the ears! Perforations in each Random Pattern Acoustimetal unit vary both in size and in order of arrangement. This pleasant variation from standard acoustical ceilings lends casual decoration to any ceiling surface.

Gold Bond Random Pattern Acoustimetal ceilings are as efficient as they are attractive. They sound condition with a noise reduction coefficient range of .80-.90. Mineral wool Acoustipads behind every perforated metal unit are incombustible; the combination of pad and metal form a completely fire-resistant ceiling structure. Soap and water are all that are needed to keep Random Pattern Acoustimetal clean . . . an advantage that keeps maintenance costs to a minimum.

Your Gold Bond Acoustical Contractor is a qualified sound control expert who can advise you on the exact ceiling required for your designs. Ask to see *all* the efficient Gold Bond Acoustical Products . . . there's one for every job and budget. For complete technical data, write Acoustical Division, Dept. AF-105.

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Build better with Gold Bond® . . . ACOUSTICAL PRODUCTS

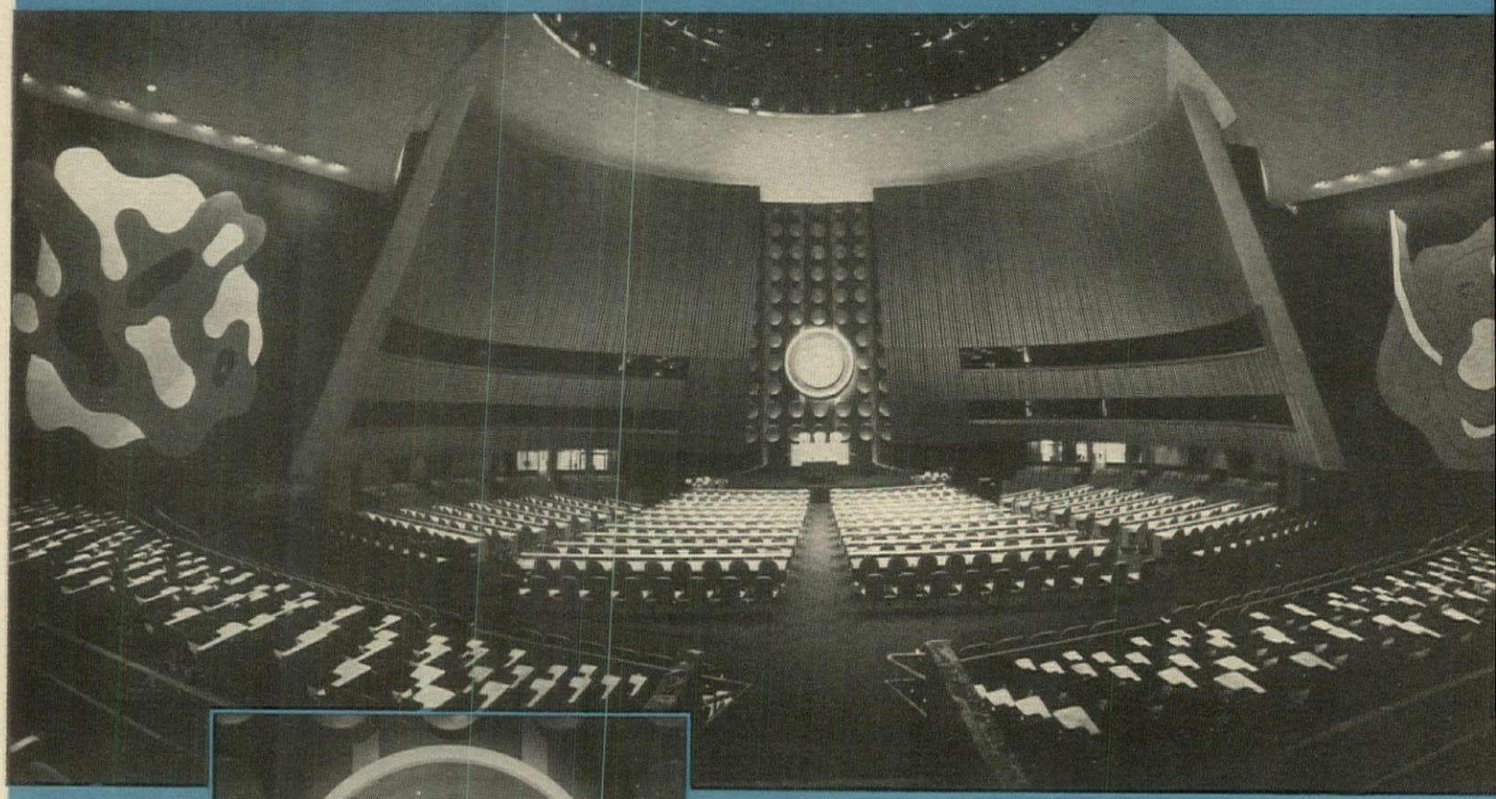


LATH, PLASTER AND LIME | GYPSUM BOARD PRODUCTS | INSULATION BOARDS PLANKS AND TILES | ROCK WOOL INSULATION | PAINTS AND TEXTURES | ACOUSTICAL TILES | ASBESTOS ROOFING AND SIDING



UNITED NATIONS

UNATIONS PHOTOS





WORLD FAMOUS UN GENERAL ASSEMBLY HALL
Air Conditioned comfort is assured by POWERS CONTROL
Seating Capacity: 2000 Delegates, Visitors, Press, Radio, TV and Translators

Architects

WALLACE K. HARRISON, Director of the Headquarters Planning Office
MAX ABRAMOVITZ, Deputy Director

Consulting Engineers: SYSKA and HENNESSY, INC.

Contractor: KERBY SAUNDERS, INC.

Great Variety of Spaces Controlled by POWERS

In addition to the main hall and council chambers Powers control is used for the many tiers of glass booths occupied by the press, radio, TV and translators; also lounges, restaurants, bars, library, radio studios and garage. There is also considerable control for wall and panel heating and snow melting.

POWERS CONTROL

THE POWERS REGULATOR CO.
Skokie, Ill. Offices in Over 50 Cities, see your phone book

Since 1891

(b6)

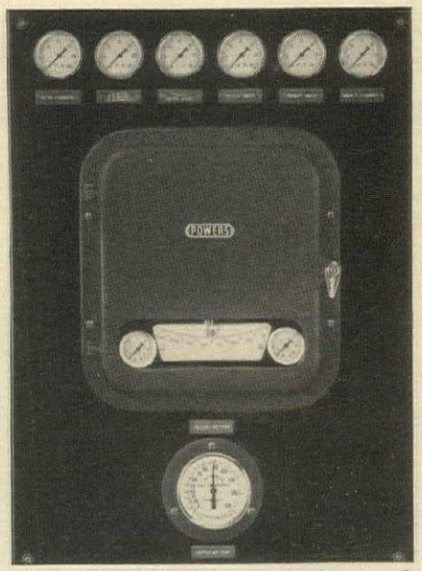
GENERAL ASSEMBLY AND CONFERENCE BUILDINGS ARE REGULATED BY POWERS

Pneumatic Systems of AIR CONDITIONING CONTROL

IN this famous international forum the engineers have succeeded in supplying optimum atmospheric environment for peaceful discussions which may help bring about a better world.

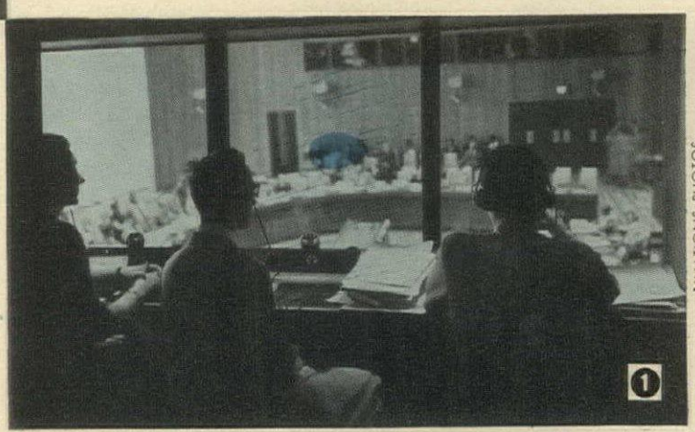
Many meeting and conference rooms and other spaces are individually controlled by Powers pneumatic thermostats. Dry bulb temperatures are set at the control panel with a Powers Series 100 Indicating Controller. Outside air is used for cooling during the intermediate season. Relative humidity is controlled during all seasons of the year. The seasonal changeover to summer, intermediate or winter is made with switches in the central control room.

Experience gained by Powers here and in many other important large and small buildings may be helpful to you. Next time a temperature or humidity control problem arises, contact POWERS nearest office. There's no obligation.



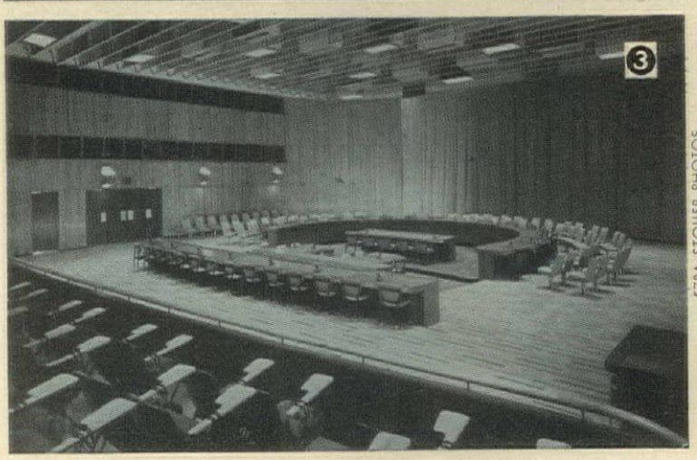
Over 70 Powers Control Panels for as many complete air conditioning systems are used at UN. Gauges on each panel indicate the position of controls.

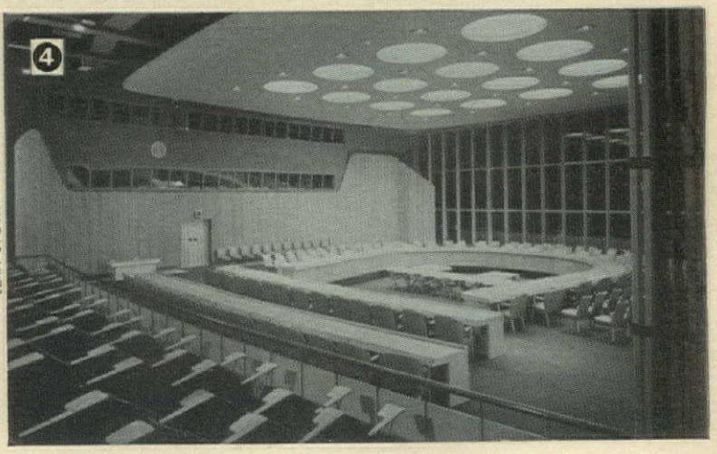
PHOTOS BELOW: (1) Translators in Air Conditioned Glass Booths (2) Security Council Chamber (3) Trusteeship Council Chamber (4) Economic and Social Council Chamber.





UNATIONS PHOTOS





EZRA STOLLER PHOTOS

(b6)

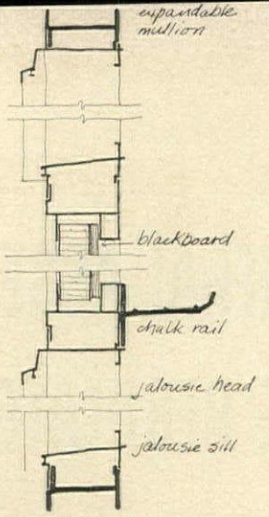
PRODUCTS

Continued from p. 228

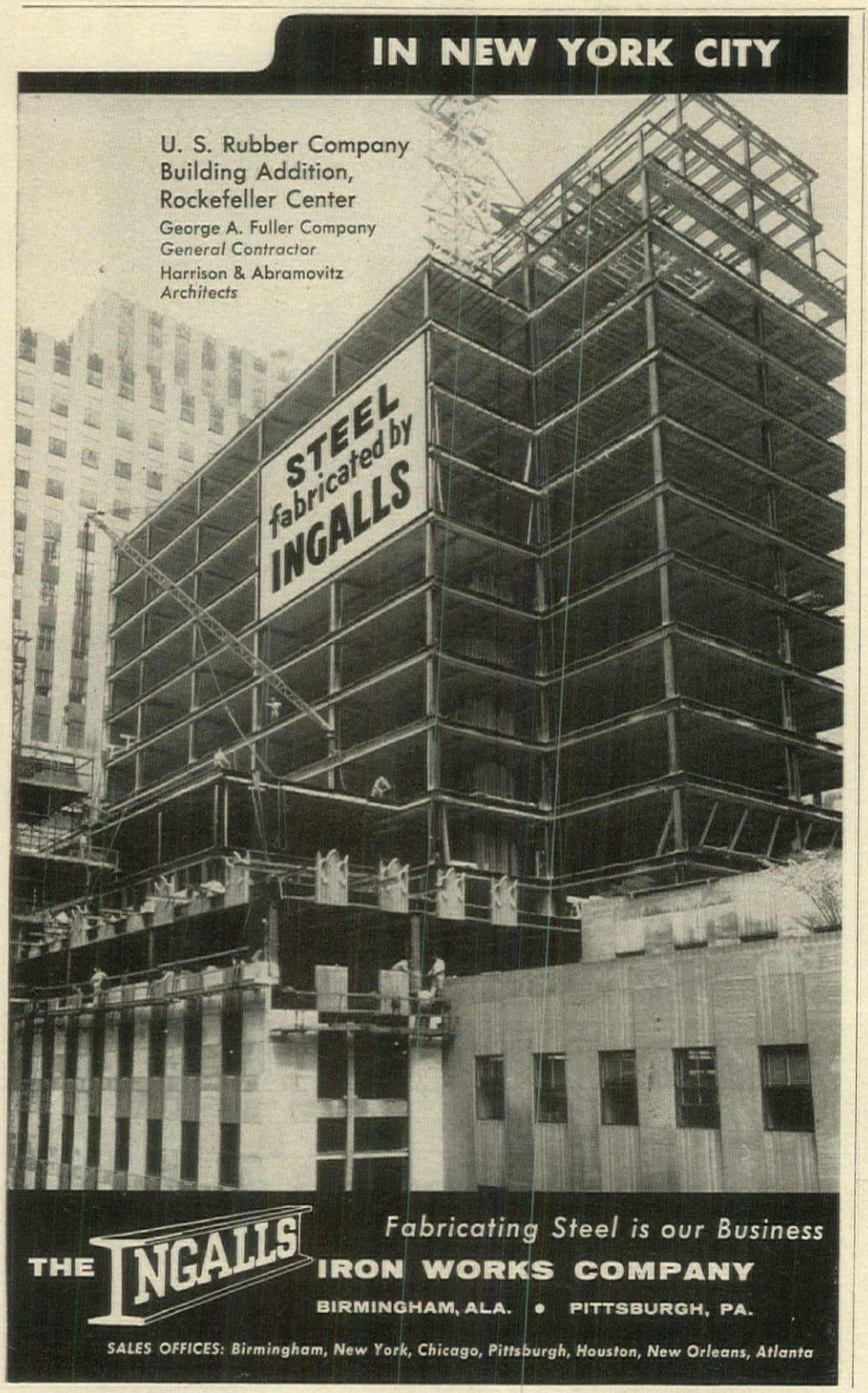
A 1¾"-thick *Arnold* panel with the honeycomb core and porcelain enamel skins has a U factor of .16. The frames are designed to take awning or double hung aluminum windows. Depending on materials selected, prices of *Arnold* panels range from $2.50 to $5.50 per sq. ft. delivered anywhere in the country and put in place.

Manufacturer: Arnold Sales Corp., Miami, Fla.





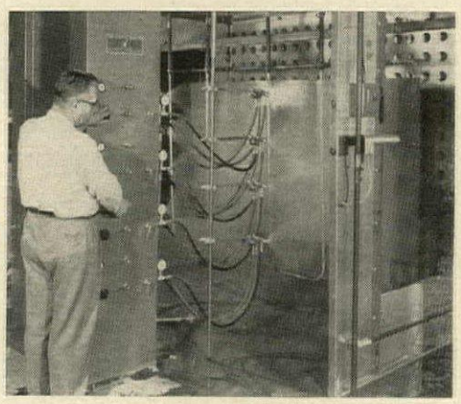
Two men can set up the modular wall panels for an average school in three days.





SILICATE COATING turns cold rolled steel into school chalkboard

Benjamin Porcenell chalkboard's light weight, chip resistance, and modest price are all credited by its manufacturer to its new silicate coat which performs well as a writing surface and is easy to maintain. Fusing to any ferrous metal at 900 to 1250° F. (300° less than other vitreous enamels) the special ceramic frit can be used on thinner gauge, less costly metals than 18-ga. enameling iron; standard 22-ga. cold rolled steel will do. Because of the lower firing temperatures, the steel stays relatively flat and so bonds easily to a hardboard or plywood backing. Applied to ¼" hardboard it weighs about 2½ lb. per sq. ft.—about 40 lb. less per 4' x 8' sheet than most porcelain chalkboards. Thickness of *Porcenell* surface, which is sprayed



on electrostatically in a prime and color coat, totals no more than .005"—half as thick as regular porcelain enamel and therefore less susceptible to chipping.

continued on p. 240



NOW!

NEW! **9/16" thickness**

beautiful, efficient

Simpson® Forestone

FISSURED WOODFIBER ACOUSTICAL TILE

costs no more than popular thicknesses of *perforated* tile...

***Forestone*, the world's first fissured woodfiber acoustical tile (invented by Simpson) is economical in the original 3/4" thickness. Now, it is available in 9/16" thickness . . . for even *greater* economy.**

***Forestone*, in the new 9/16" thickness for the first time brings beautiful *fissured* tile into the same price range with popular 5/8" and 3/4" perforated fiber tiles.**

***Forestone*, the most important development in acoustical materials in 20 years, has the natural, travertine-like beauty of fissured *mineral* tile, but with even greater warmth and richness...*and at far less cost*. It has been installed in thousands of offices, restaurants, schools, stores . . . *and homes*. It is the only paintable, efficient acoustical tile, *without mechanical perforations*, that is economical enough for widespread use in home sound conditioning.**

Installed only by Simpson Certified Acoustical Contractors identified by this symbol

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Mail this coupon for information and name of nearest contractor

Simpson Logging Company, 1010 White Bldg., Seattle 1, Washington

Please send full details on Forestone Acoustical Tile

NAME_____

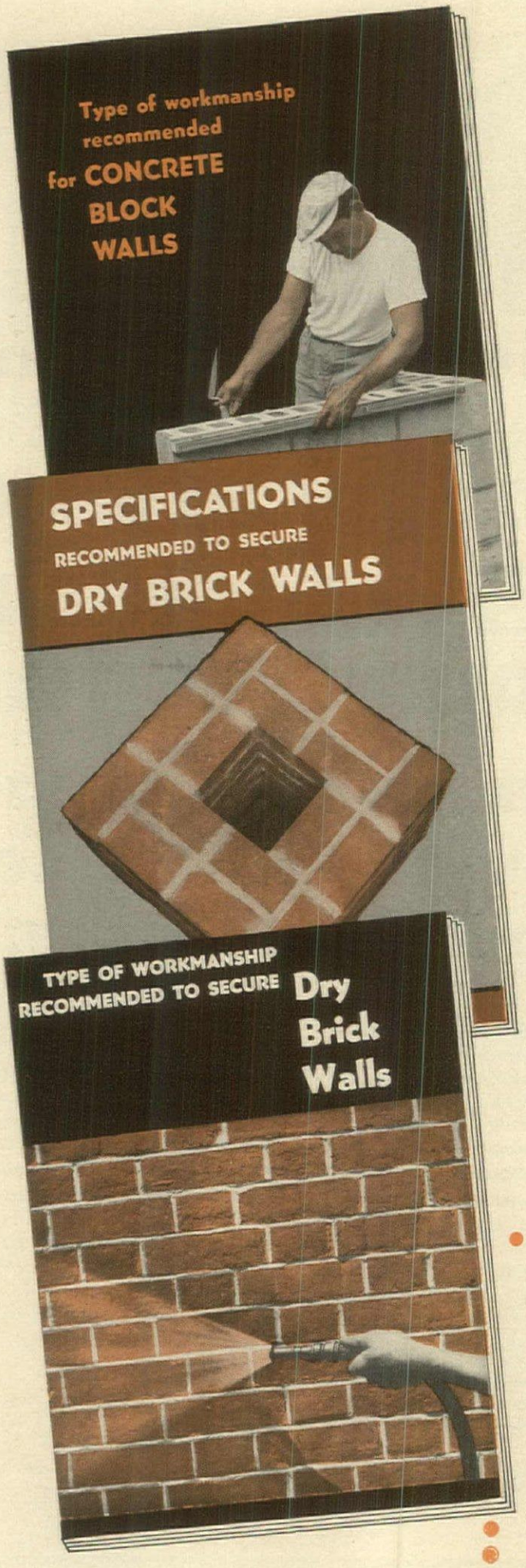
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Each of these books has been endorsed by foremost authorities. Each has received a citation of merit from the Producers' Council and the American Institute of Architects. Each is fully illustrated, clearly written. Each contains a wealth of really valuable information.

These books are *not* advertisements for our product, Brixment. They are published and made available to members of the building trades solely as an industry service. Mail the coupon, *today*, for your free copies.

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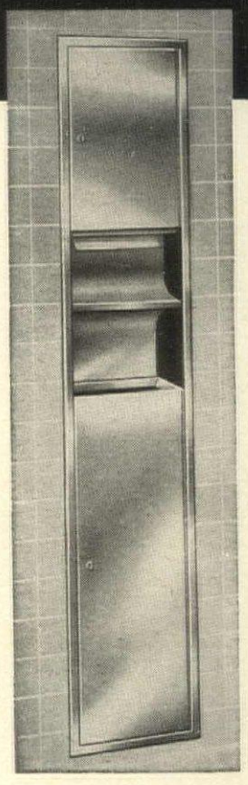
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NIBROC®

towels and cabinets will insure washroom efficiency for world's most modern building



41-story Mid-America Home Office of The Prudential Insurance Company in Chicago.



THE Prudential Insurance Company of America, meticulous in its choice of quality products for its new Mid-America Home Office building in Chicago, on a competitive basis is installing Nibroc Towels and Nibroc Recessed Cabinets.

First wet strength towel—and still the finest—Nibroc Towels are super-absorbent, strong, sanitary, soft-textured. They speed up washroom traffic . . . stop waste because *one* towel dries both hands . . . cut maintenance costs. More and more architects specify Nibroc Cabinets because . . .

Nibroc multifold cabinets hold 50% more—require less servicing. Available in 3 models—wall, floor and recessed. Wall cabinets in durable white enamel (with or without mirror) and easy-to-clean chromium plate or stainless steel.

New, improved recessed dispenser with waste receptacle—loads faster, holds far more towels for washrooms with heavy traffic. Handsome 22-gauge stainless steel for long, trouble-free service. Dispenser and waste receptacle available separately for washrooms where desirable to stagger towel cabinets and receptacles.

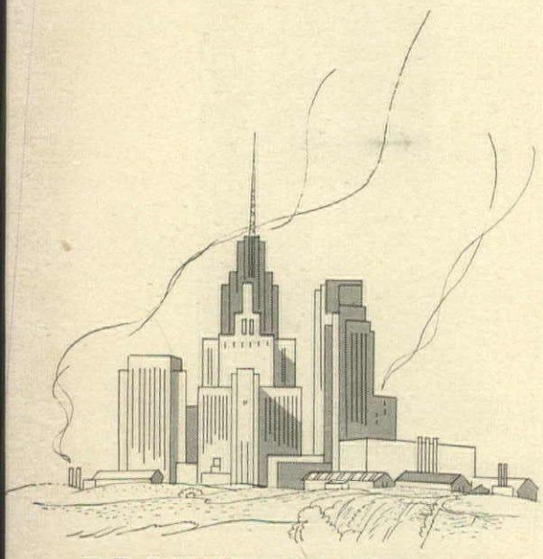
Use the finest—Nibroc Towels and Cabinets. For name of distributor see "NIBROC" in your classified directory or write Dept. NU-10, our Boston office.

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General Sales Office:
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yet the record of its use in every part of our country reads like a history of architecture. This is important because it provides usable data from a living laboratory of building — proof that Indiana Limestone wears as well as it looks.

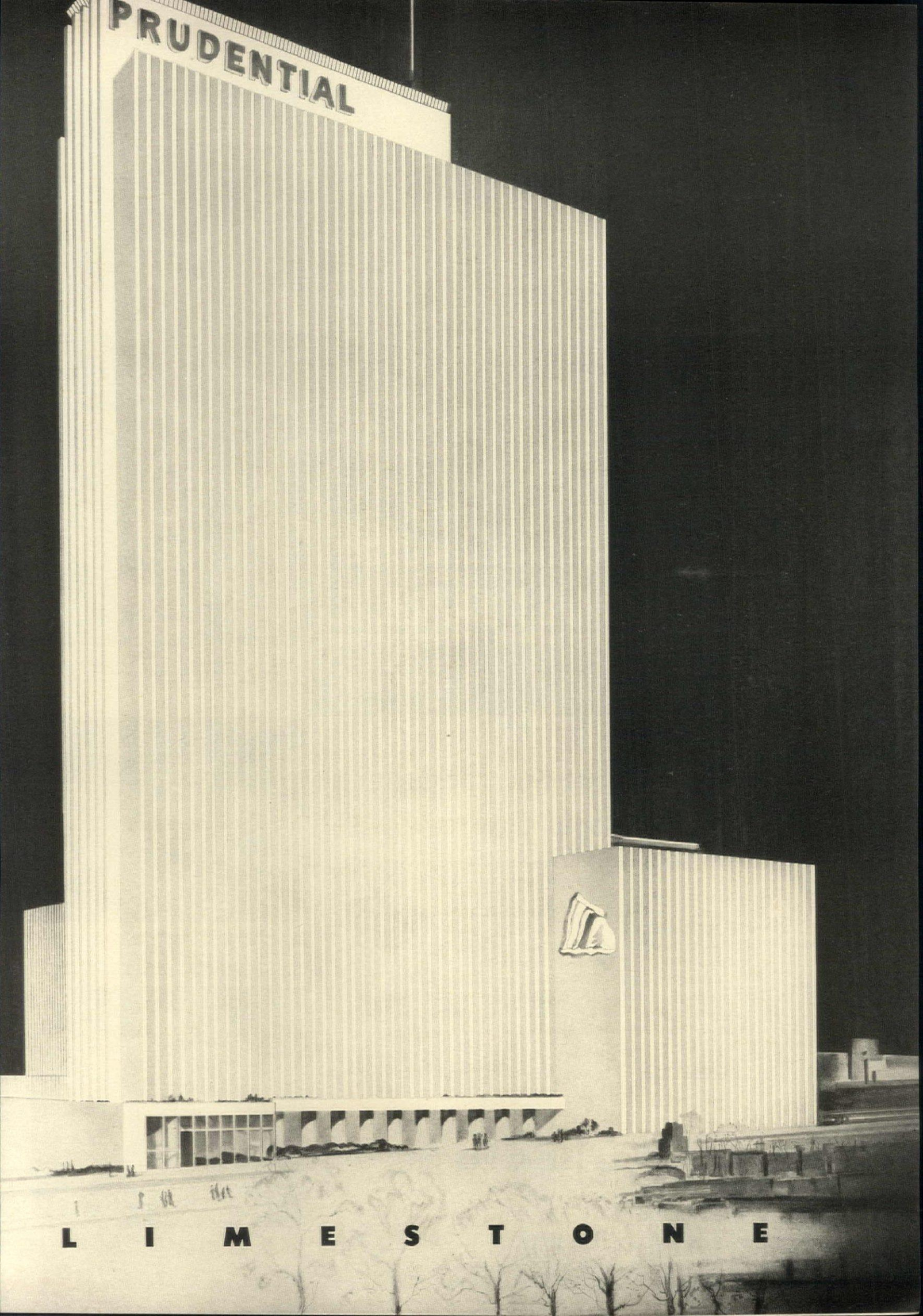
PROVED IN ONE OF THE WORLD'S GREAT LABORATORIES

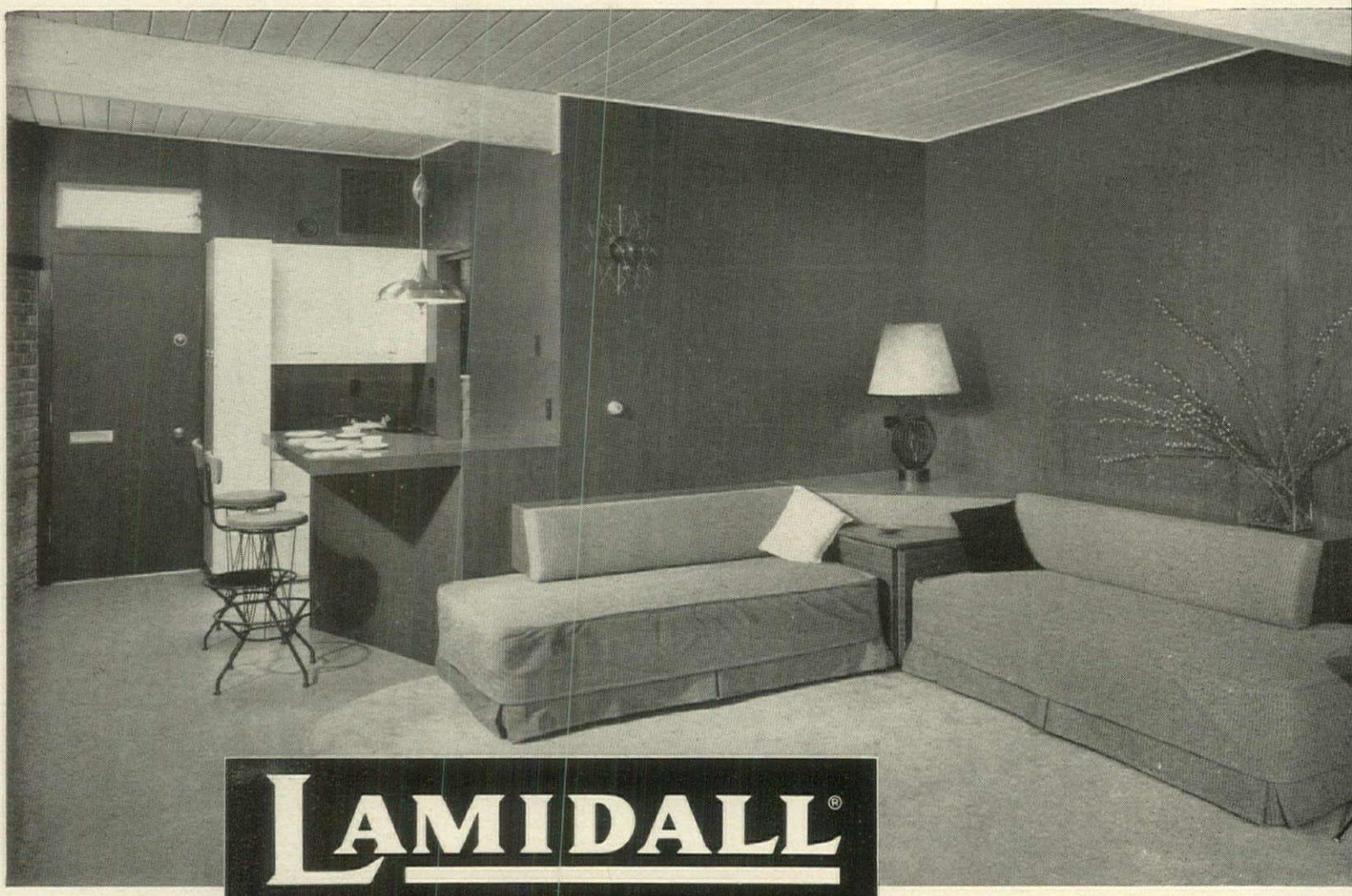
The beauty, versatility, and durability of Indiana Limestone are established facts. Its economy and complete adaptability to every idiom of contemporary building are also facts and have been effectually told in a new brochure, "New Concepts in the use of Indiana Limestone". Write now for your free copy, or for any other information you might need to the Indiana Limestone Institute, Bedford, Indiana.

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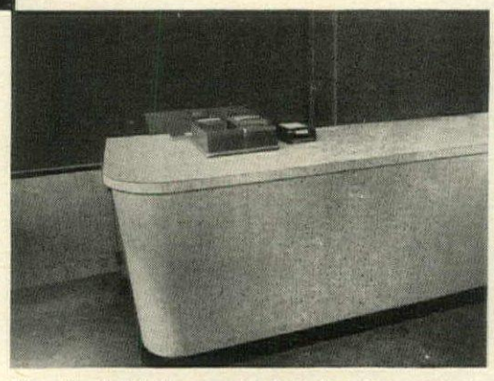
Decorative Plastic Laminate

Beautiful Natural Walnut Lamidall Walls, Counter Top and Door in the Studio Town Houses, Evanston, Illinois, designed by Schurect, Inc., Morton Grove, Ill.

For Walls That Stay Beautiful Without Care

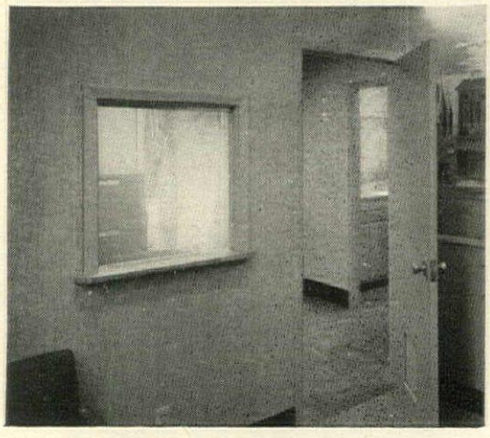
For interior walls and fixtures in new construction or remodeling no other material can match Lamidall for beauty, durability and over-all low cost. Lamidall's colors, patterns and wood grains have been selected to blend with modern and traditional design. Lamidall has a lasting beauty that won't rub off, stain, crack or mar . . . that cleans easily with the wipe of a damp cloth . . . that never needs refinishing.

Lamidall is made in ⅛" thick panels up to 4′ x 12′. They are easy to handle, structurally strong and economical to install . . . no special tools or skills are required. Send today for samples and installation information.



Prima Vera Lamidall was a wise choice for a busy counter in this Two Rivers, Wisconsin, factory office.

Prima Vera Walls of Lamidall make a permanently attractive interior for this office in the Irving Zuelke Building, Appleton, Wis.



LAMIDALL – *A good investment in a lifetime of beauty . . . proved in years of service*

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New plant for a growing newspaper...



WIRE BY PHELPS DODGE

This outstanding newspaper plant—recently completed for Camden Newspapers, Inc., publishers of the Camden, N. J., Courier-Post—is New Jersey's newest and most modern.

Dependable Phelps Dodge wire and cable installed throughout the plant helps assure uninterrupted electrical service for the latest in newspaper equipment. This equipment includes an eight-unit, four-color, high speed press printing up to 55,000 copies per hour and automatic machines to count, bundle and convey the papers to delivery trucks.

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On every job, large or small, where top quality materials, expert workmanship and experienced "know-how" are called for, *it pays to rely on Phelps Dodge and your Phelps Dodge distributor!*

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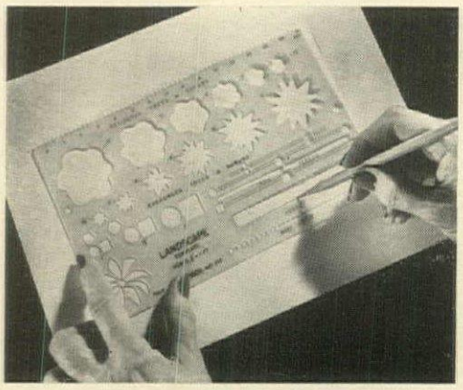
SALES OFFICES: Atlanta, Birmingham, Ala., Boston, Buffalo, Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Fort Wayne, Greensboro, N. C., Houston, Jacksonville, Kansas City, Mo., Los Angeles, Milwaukee, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, Portland, Ore., Richmond, Roanoke, Rochester, N. Y., San Francisco, St. Louis, Seattle, Washington, D. C.

PRODUCTS

Continued from p. 232

Porcenell's abrasion resistance compares favorably with porcelain and glass, and its color is said to be permanent. The chalkboard's reflectance factor is not less than 15% and not more than 20%. Boards are produced in standard widths of 3′, 3½′ and 4′ and lengths of 4′, 6′, 8′ and 10′, and cost about $1.50 to $1.60 per sq. ft.

Manufacturer: Benjamin Electric Mfg. Co. Dept. NS, Des Plaines, Ill.



TREE TEMPLATE aids in landscape planning

Should an architectural office think itself fully outfitted with templates for every geometric form conceivable, here is a matte vinyl tracing plate inscribed with some shapes less formal but nonetheless important in building design: trees. Engraved with symbols for deciduous and evergreen trees and shrubs, 8⅜″ x 5″ template accurately gauges the in-bloom proportions of the most common nursery and planting sizes—from seedling to sapling on up, all in ¼″ scale. Also included are scaled symbols for hedges, fencing, and a group of hexes, circles, and squares which can be adapted to represent various landmarks. Price of the template is $2.50, postpaid.

Manufacturer: A. Lawrence Karp, 16 Putnam Park, Greenwich, Conn.

PULPBOARD SLEEVE makes way for conduit in concrete slab

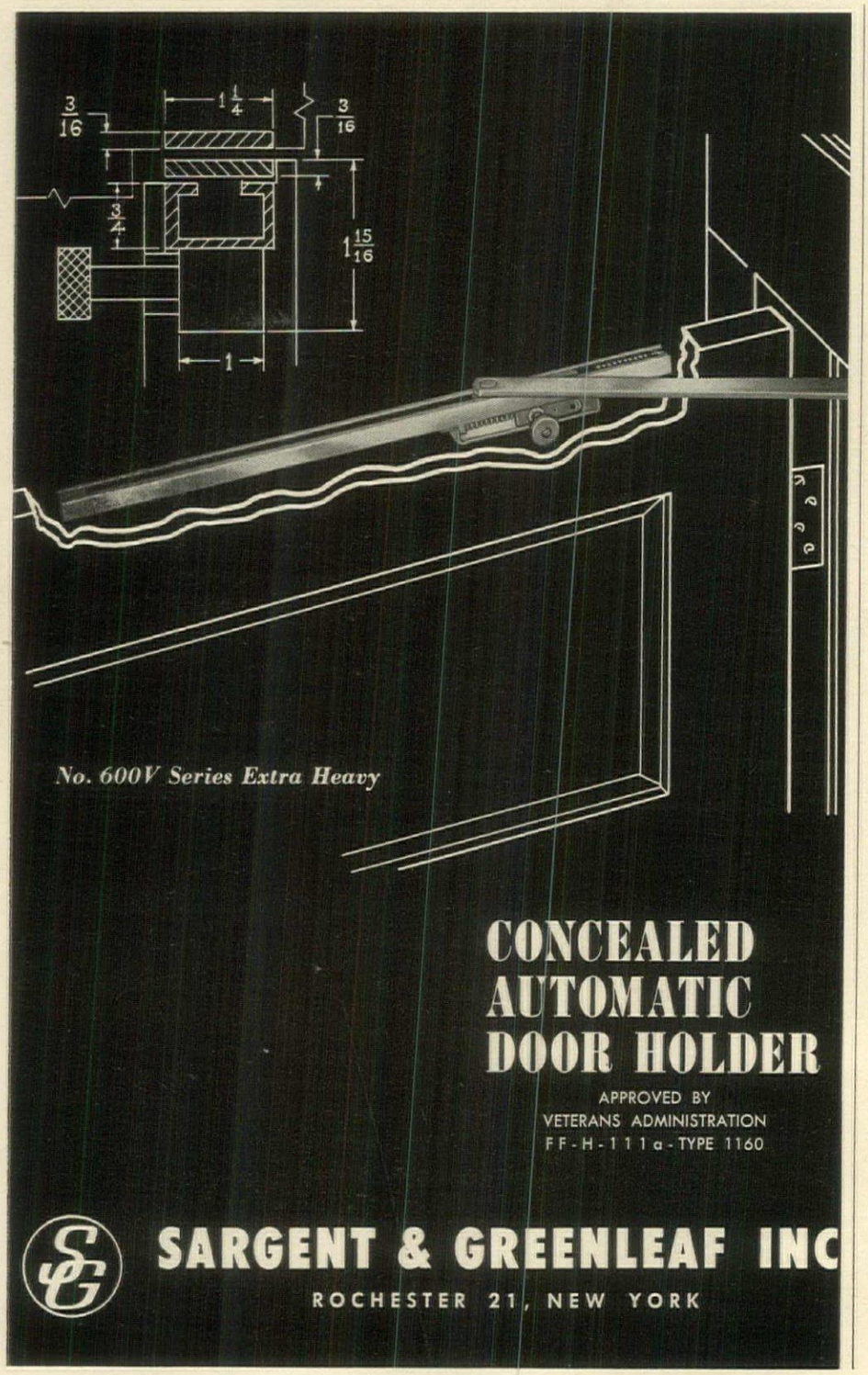
A cardboard *Sonopipe Sleeve* is a simple inexpensive device for coring concrete floors or roof decks for plumbing, heating and electrical lines. No greasing or sand fill is needed with the wax treated fiber tubes which are 0.125″ thick and strong enough to withstand the pressure of poured concrete despite their light weight. Available in inside-diameter sizes ranging from 2″ to 8½″, the sleeves also can be used to create drains in bridge decks and weep holes in concrete walls. Two metal ends with built-on anchors are used with the sleeves. One closure is nailed to the form and the *Sonopipe* tube sawed to size from a 3′ length and slipped over the



closure. The other metal end is then inserted in the top of the sleeve and anchored to the form to hold it straight. After the concrete sets, closures are knocked out leaving a neat opening for pipe or conduit. Where sound insulation is important, the sleeve itself can be left in. *Sonopipe* in the 4″ size runs about 18¢ per ft., FOB factory, and metal ends to fit that size are 6¢ apiece.

Manufacturer: Sonoco Products Co., Hartsville, S.C.

continued on p. 246



HERE IS STRENGTH AS ENGINEERED

BY MACOMBER FOR EACH LOAD AND SPAN TO 96'

From the Designer's Standpoint – Macomber



gives you not only the six standard types of parallel and sloping chord Longspans in underslung and square end designs but ADAPTABILITY to all framing conditions.

You may want top chords extended for an eave overhang or bottom chord extended for ceiling attachment, square ends punched or fitted with bearing plates. Look to Macomber for a more economical solution . . . Longspans completely flexible to the designer's needs.

THESE MACOMBER PRODUCTS

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Now Macomber Products are produced under Pittsburgh Testing Laboratory resident inspection.

LOOK FOR THIS TAG on your next shipment.

STANDARDIZED STEEL BUILDING PRODUCTS

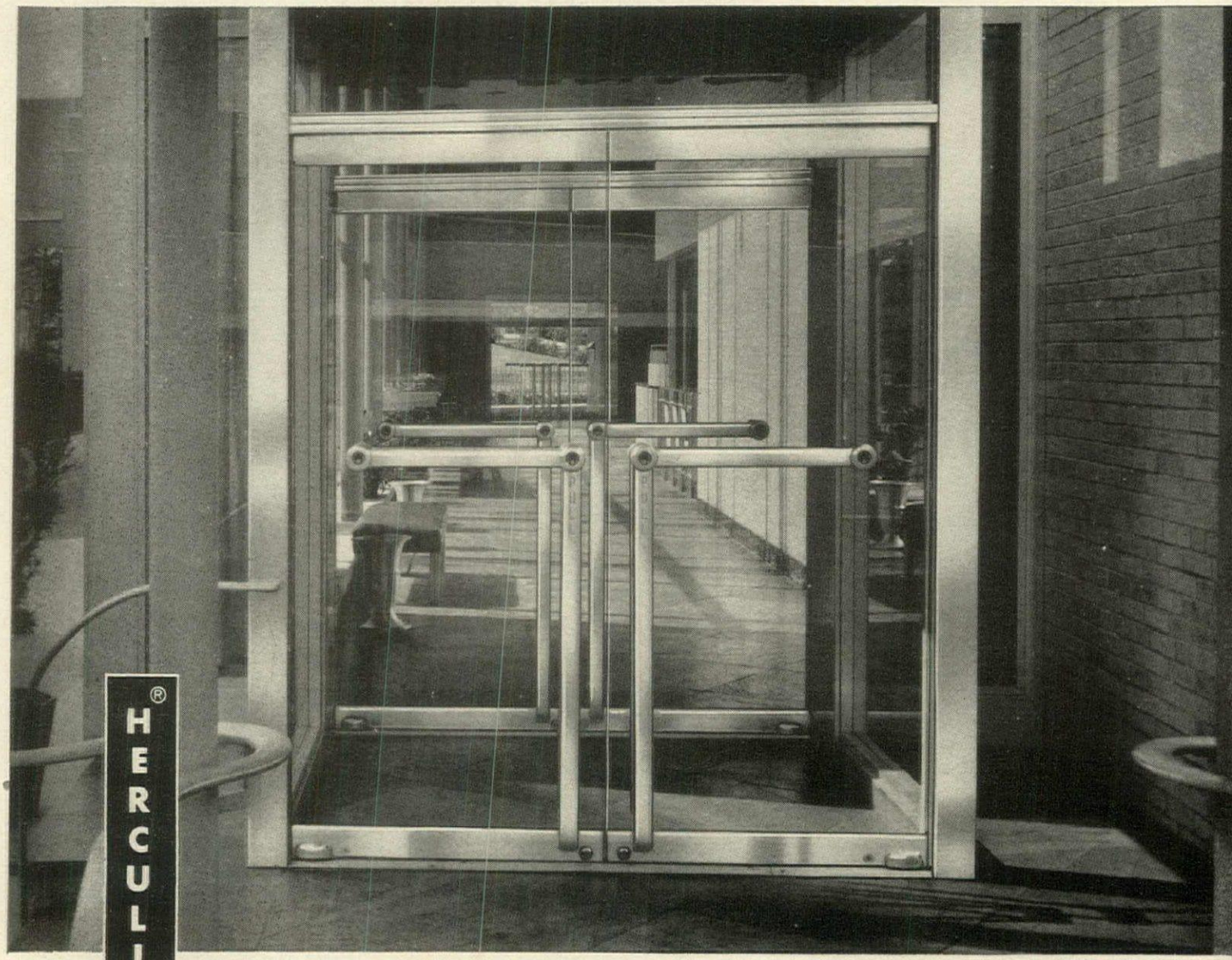
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NAILABLE STEEL JOISTS • LONGSPANS • BOWSTRING ROOF TRUSSES • METAL DECK • V-LOK STEEL FRAMING • STRUCTURALS

Pittsburgh Doors combine

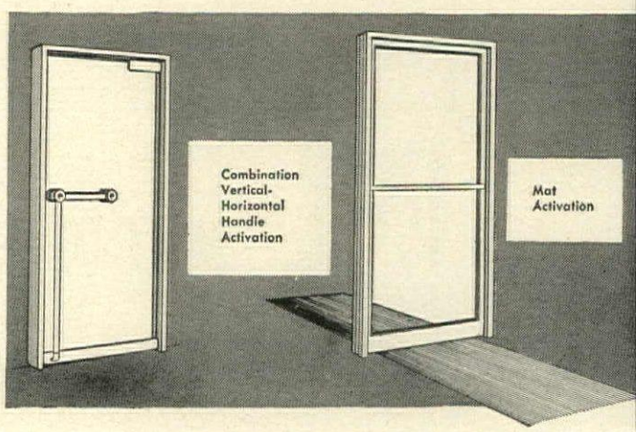


In this new building of the National American Bank in New Orleans, Louisiana, these Herculite Doors, equipped with Pittsburgh's Pittcomatic Hinge—"the nation's finest automatic door opener"—were basic to the structure's architecture. Ten doors and five sidelights were utilized here. Available in ½" and ¾" thicknesses, Herculite is made from Pittsburgh Polished Plate Glass, subjected to a special tempering process which makes it four times stronger than conventional glass of the same thickness. Architects: Goldstein, Parham and Labouisse, New Orleans, La.

Herculite and Tubelite Doors open at a touch ...with the PITTCOMATIC®

How the Pittcomatic operates: Smooth hydraulic power is supplied by the power unit, through ⅜" copper lines, to the hinge under the door. In the *handle*, or *mat*, there is a 10-volt circuit which passes through the control box and activates the power unit. Adjustments provided in the control box and the hinge regulate the action of the door. It's the safest automatic door opener to operate . . . the easiest to install and maintain.

For detailed information on Pittsburgh Doors, see Sweet's Architectural File . . . sections 15a/Pi and 15d/Pi, or write to Pittsburgh Plate Glass Company, Room 5365, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.



TYPICAL PITTCOMATIC INSTALLATIONS

architectural flexibility

...dependable operation

...long, trouble-free life!

REGARDLESS of the entrance problem confronting you, there is a Pittsburgh Herculite or Tubelite Door which will solve it. In buildings of all types, these doors are finding increasing favor with architects and owners alike. That is because Pittsburgh Herculite and Tubelite Doors are unexcelled in their adaptability to any architectural plan. And they are unequalled in handsome appearance, trouble-free operation and long life.

TUBELITE®

With lines that are clean and simple, Tubelite Doors and Frames mark a decided step forward in hollow metal entrance design. This simplicity of design makes them readily adaptable to any type of building or entrance construction. A unique interlocking feature makes Tubelite Doors extremely rigid. This assures their true shape being held through long and continued use. Moreover, Tubelite Doors are easily and quickly glazed and installed. Architects and building owners are specifying them more and more, because of these facts, and because they offer the most value at the lowest possible cost. J. C. Penney Co., Lancaster, Pa.; Architects: J. C. Penney Co., Inc., New York, N. Y.



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PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

3325 WILSHIRE BUILDING, *Los Angeles, California*
OWNER AND BUILDER: *Tishman Realty and Construction Co., Inc. New York and Los Angeles*
ARCHITECT: *Victor Gruen, A.I.A., Los Angeles, New York and Detroit*



serving the architect, and owner-builder

with metal wall engineering and production quality

This new 13-story office building will be completely air-conditioned. To admit maximum natural light without the discomfort of glare and direct sunlight, the building has been designed with projecting horizontal sunshades on the south and north elevation, and vertical louvers on the east and west elevation. The complete aluminum wall framing and vertical louvers will be Kawneer engineered and produced, saving the architect and builder months of time and giving them the assurance of client satisfaction. Special Kawneer weather-tightness plus expansion and contraction features will be included.

Have you a metal wall problem? Why not delegate the whole responsibility to Kawneer. Five plants in the United States and Canada, a complete engineering staff, and 50 years of experience in architectural metals are waiting to serve you.

Write for folder describing Kawneer services and metal wall jobs.



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ARCHITECTURAL PRODUCTS DIVISION





Saks Fifth Avenue in San Francisco has an atmosphere all its own. So does every department in the store. Four Carrier Zoning Weathermakers* meet the variations in heat load, keep comfort constant from foyer to fitting rooms.



Edward Malley Company in New Haven, Conn., cools four floors and a basement with 27 self-contained Carrier Weathermakers*. Units are located in storage spaces off the selling floor, require only a small amount of ductwork.



Kline's West, Carrier-equipped department store in St. Louis, has a unique air duct system. Conditioned air comes from "trees"—ceiling-suspended, tree-like lighting troughs centrally located over main floor and mezzanine.

Carrier is the quickest way to the right answer

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Carrier has all the ways to air condition any job—and all Carrier equipment is engineered to the same uniform standard. So short-cut hours of selection by (1) using the Carrier line as your shopping guide and then (2) comparing values. Get in touch with your Carrier dealer or distributor. He's listed in the Classified Telephone Directory. Or write to us directly. Carrier Corporation, Syracuse, New York. *Reg. U.S. Pat. Off.

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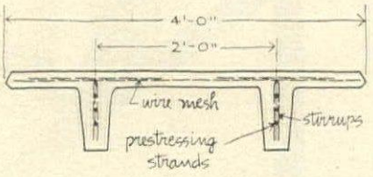
PRODUCTS

Continued from p. 240

CONCRETE CHANNELS prestressed and cast at plant

Minimizing site labor as well as material weight, *Leap* prestressed concrete double-tee joists for roofs and floors, bleacher seats, and channels for heavy floor loads and bridges are delivered ready for erection. Precast in several stock load-tested designs, the long-span units make for

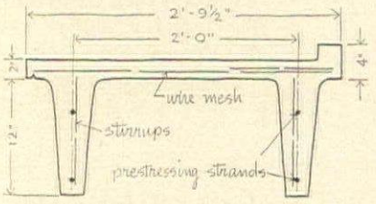




lighter looking, fire-safe structures at a very economical price. Depending on span and loading required (complete tables are available from the manufacturer) the double-tee roof units cost from 75¢ to $1 per sq. ft. delivered and in place. A 40′ span unit designed for a 40 lb. live load runs about $1 per sq. ft. The heavy duty channel for up to 20′ span carrying a live load of 800 lb. per sq. ft. can be installed for about $2 per sq. ft. of floor area. Overall costs of the Schneider Memorial stadium (photo below) built of prestressed *Leap*



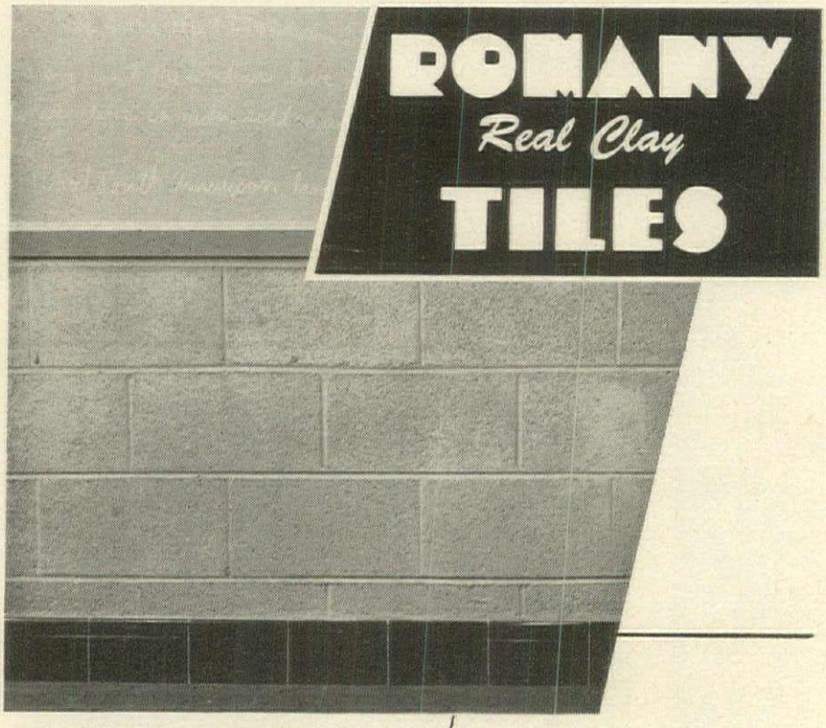
channels spaced 32′ o.c. on a reinforced concrete frame, were only $13.50 per bleacher seat (not including utilities or preparation of playing field). Since that structure was built, slight modifications have been made in the channel design to make it serve as a complete bleacher seat,



bringing stadium costs down to $10 a seat. Stadium sections spanning 29′ run about $6 a seat. In the dairy building under construction (above left) double-tees were used for both floors and roof members. All columns and beams are hollow, one-piece and were precast and prestressed. *Leap* preengineered concrete members are being fabricated currently in Ontario, New York, Pennsylvania, Tennessee, Missouri, North Carolina, South Carolina and Florida.

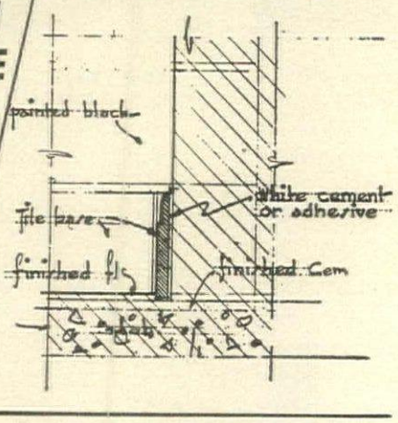
Designer-Fabricator: Lakeland Engineering Associates, Inc., 211½ S. Tennessee Ave., Lakeland, Fla.

continued on p. 252



DIRECT ADHESION ROMANY BASE TILE

Now it is possible to repeat the window sill tile color in school rooms with this new ROMANY B-58 Base Tile. Available in all Buff Body Colors and has a flat back for easy application. Can be economically installed with adhesive or by cement method, direct to the wall block, plaster or wall board. Provides a durable area that is kick proof and mop proof and assures an attractive appearance.



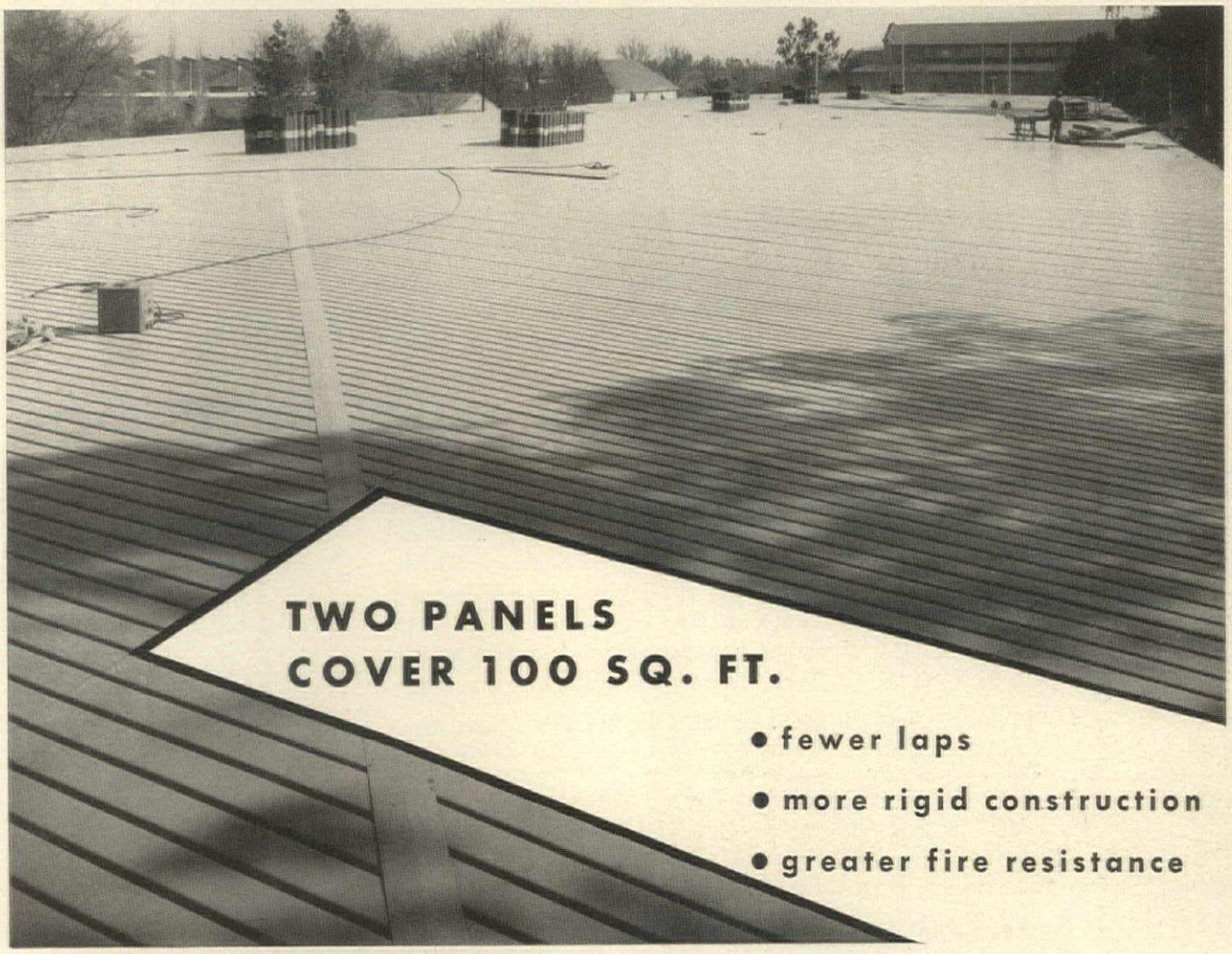
Every Architect should have our Sample Tile Chart No. 6. It's free.

UNITED STATES CERAMIC TILE COMPANY

Member: Tile Council of America and Producers' Council, Inc.

217-J FOURTH ST., N.E., CANTON 2, OHIO

LARGE SIZE AIRTHERM ROOF DECK REDUCES COST 10%



ARE YOUR JOBS GETTING THE LOWER COST BENEFITS OF AIRTHERM ROOF DECKING?

No construction delay because of weather—that's the reason steel decking saves invaluable time and money. Airtherm large size Decking reduces labor and handling costs as much as 10% by actual installation reports. This results in additional time savings, quicker occupancy, fewer laps, greater structural strength, and a more fire and buckle resistant roof. Make us prove Airtherm's advantages on your next roof deck job. Phone, wire, or mail coupon.

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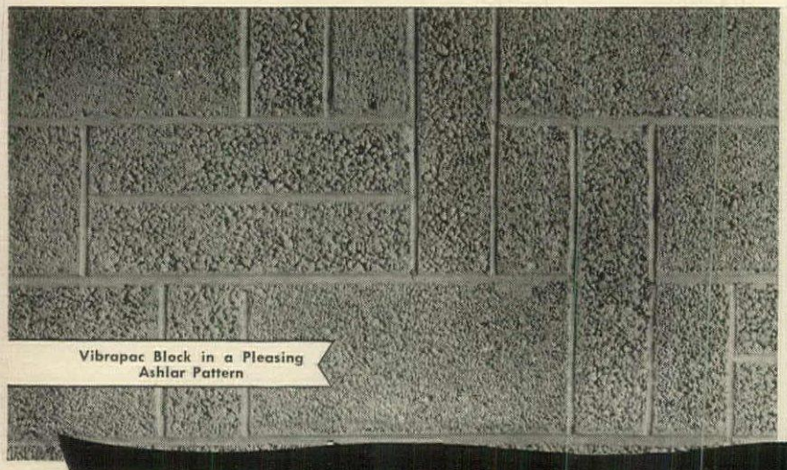
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Please send complete information on Airtherm Roof Decking.

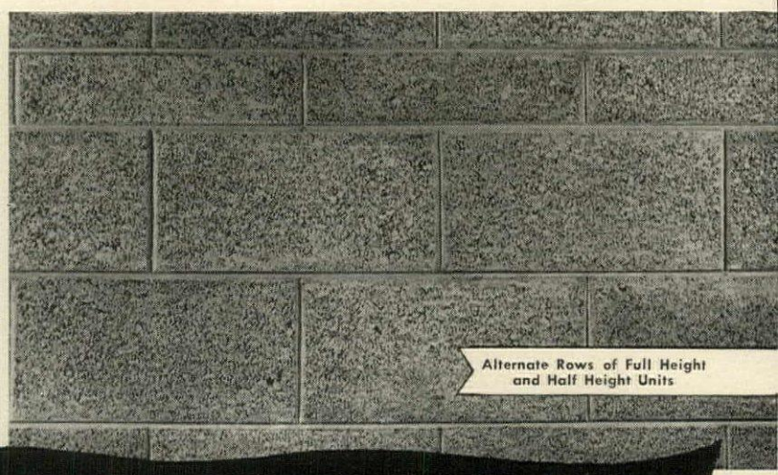
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Street_____

City_____ State_____



Vibrapac Block in a Pleasing Ashlar Pattern



Alternate Rows of Full Height and Half Height Units

Vibrapac Block is Versatile!



Basket Weave at Left and Vertical Stacking at Right

. . . Provides an Endless Variety of Textured Patterns . . . Sizes Available in Direct Proportion to Wall Areas

You get beauty at its permanent best when homes and other buildings are built of Vibrapac Block. This modern, low-cost building material provides almost unlimited opportunities for creative architecture and structural versatility. Numerous styles and sizes, interesting textures and distinctive color tones challenge both architect and builder in their efforts to achieve beauty and permanence. Ask your nearby Vibrapac Block plant for literature, or write direct:

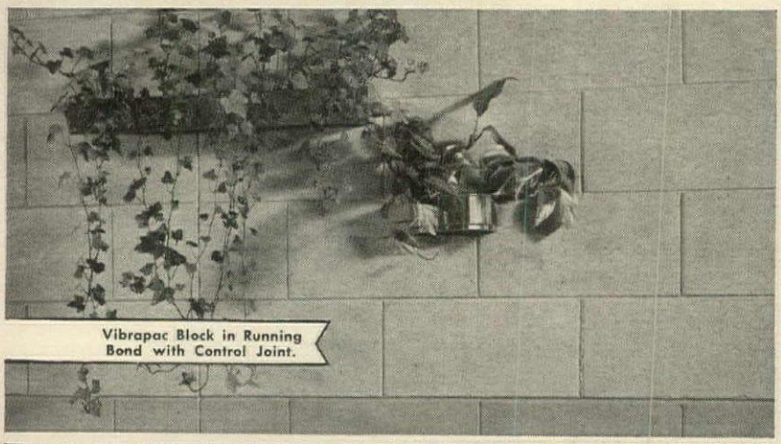
BESSER COMPANY, Box 179, Alpena, Mich.

Complete Equipment for Concrete Block Plants

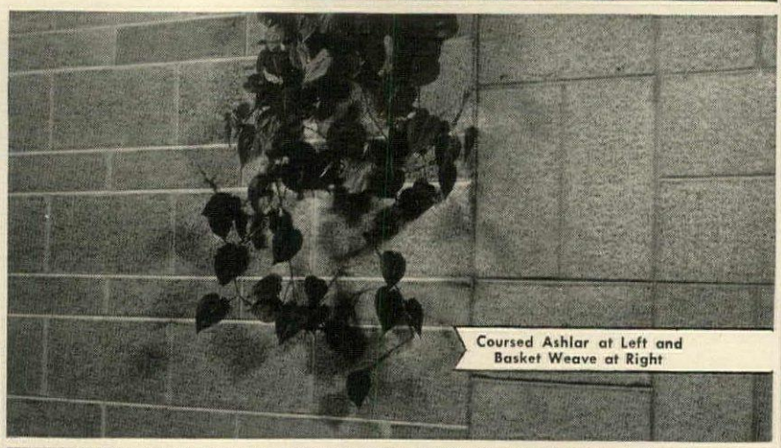
All pictures shown here are unretouched



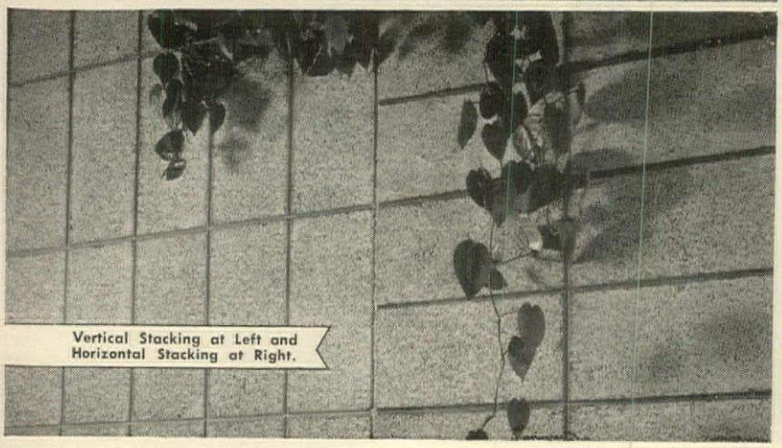
Half Block Stacked. Even the Clock is Made of Vibrapac Block



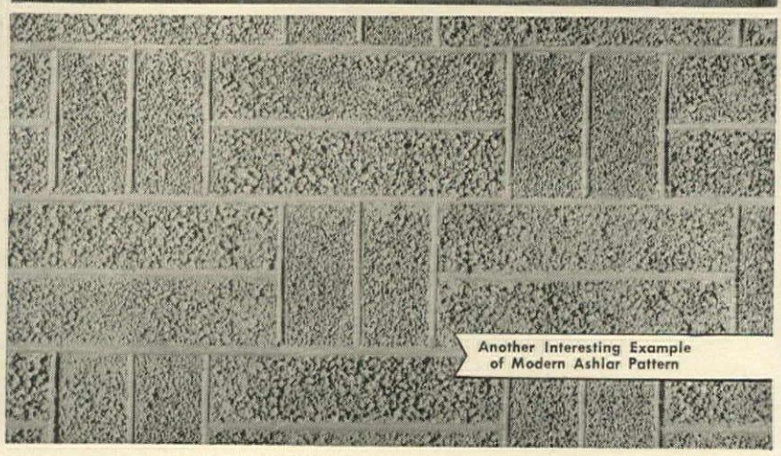
Vibrapac Block in Running Bond with Control Joint.



Coursed Ashlar at Left and Basket Weave at Right



Vertical Stacking at Left and Horizontal Stacking at Right.



Another Interesting Example of Modern Ashlar Pattern



Glass containers for every purpose are designed and manufactured by Owens-Illinois Glass Company—over 100 billion units made in last 25 years

More than 3,000 new designs per year

—without a "bottleneck" in drafting

In the Design Development Department of the Owens-Illinois Glass Company, Toledo, Ohio, no time is lost in tedious redrafting. A simple short cut involving the use of Kodagraph Autopositive Paper and Kodalith Film *gives customers fast service . . . saves dollars every day.* Chances are you can adapt this technique to your own routines.



Big head start. Kodalith Film prints of elements which are repeated from time to time are kept on file. When a new design calls for any of these elements, the draftsman merely tapes the right films on clear acetate *and orders an Autopositive.* No redrafting!



A positive photographic intermediate is produced *directly* by exposing the "paste-up" in contact with Kodagraph Autopositive Paper, then processing the print in standard photographic solutions. No negative step . . . *easy room light operation.*



New design is added to the Autopositive, which has dense photographic black lines on a clean white translucent base. Required number of shop prints—each crisp and uniform—are produced from this master, which can also be used later on for minor revisions.

Kodagraph Autopositive Paper

"THE BIG NEW PLUS" in engineering drawing reproduction



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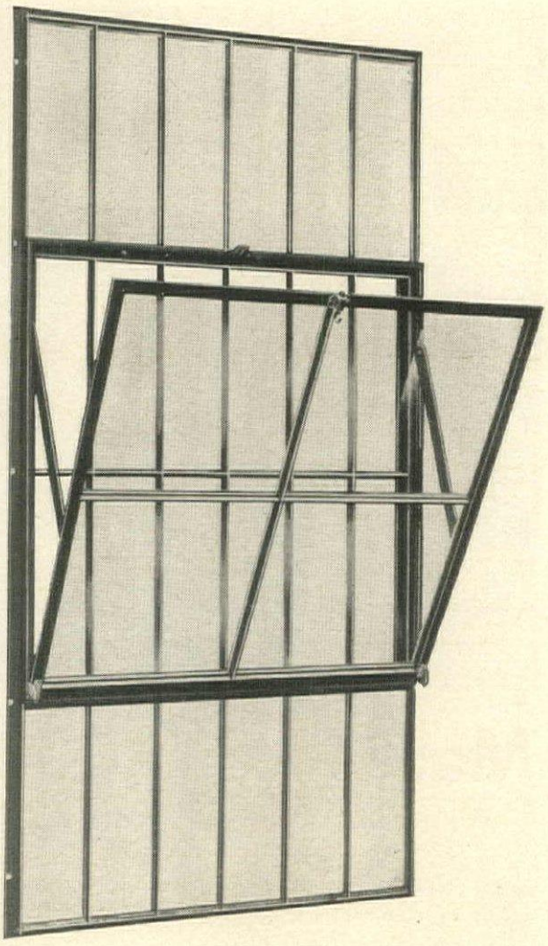
Company_____ Street_____

City_____ Zone____ State_____

Kodak
TRADE-MARK

How to outwit a prowler





The sight of the built-in steel grille in this Fenestra* Security Window will discourage even the most determined prowler! And a confederate inside can't help much, either, for the window is designed so that it's mighty difficult to hand material through.

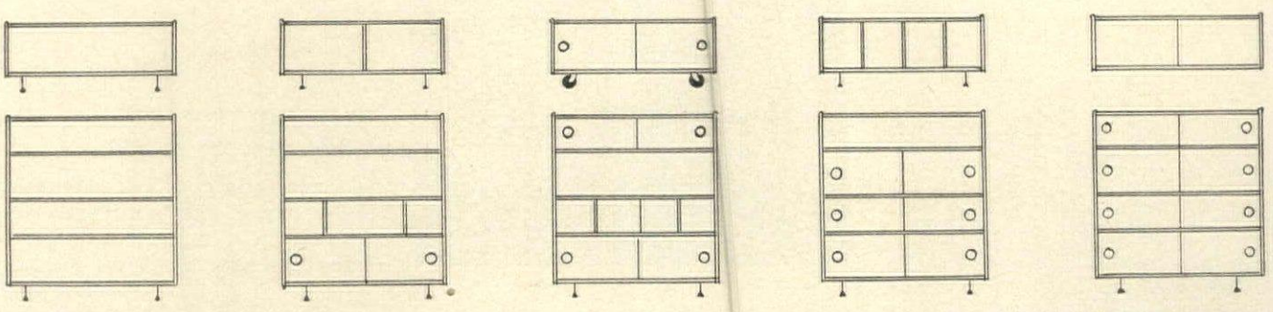
These prowler-proof windows also give you ideal ventilation. The bottom-hung, open-in vents deflect drafts upward, shed rain to the outside. Windows with obscure glass can be kept open without exposing the interior to outside view—ideal for rest rooms. And the vents do not open out over sidewalks, endangering pedestrians, or protrude into alleys or driveways, where vehicles can damage them.

Fenestra Security Windows are good looking, too! No separate bars outside the window. The window and grille are one unit. You can install the complete unit in one easy operation. They're ideal for stores, warehouses, garages, small plants and many other buildings, in first-floor walls, unprotected side and rear elevations, and near fire escapes or roofs of adjoining buildings. For more information, call your Fenestra representative, who is listed in the Yellow Pages. Or write the Detroit Steel Products Co., Dept. AF-10, 2296 East Grand Blvd., Detroit 11, Michigan. *®

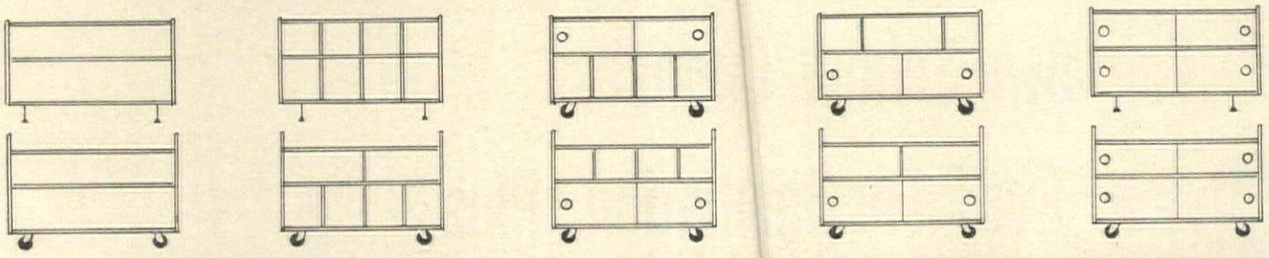
Fenestra GBS **SECURITY WINDOWS**

GALVANIZED-BONDERIZED-STEEL — THE STRONGEST MATERIAL, CORROSION-PROOFED FOR LIFE!

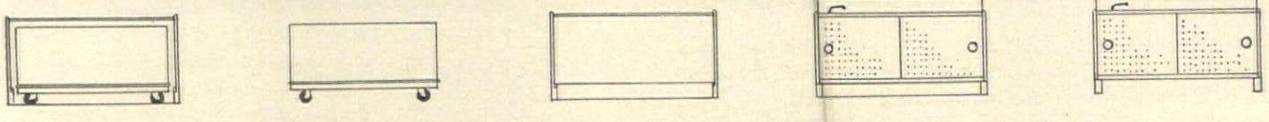
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ELECTRIFLOOR* • ROOF DECK • HOLLOW METAL SWING AND SLIDE DOORS



Eliminate costly custom millwork with flexible classroom cabinets by **Brunswick!**







The 10 basic designs in Brunswick's exciting new classroom cabinet line form literally thousands of variations. Specified by you and factory-built by Brunswick, they give you complete quality control over the classrooms you design.

Dimensions, parts, finishes and workmanship are uniquely standardized to eliminate costly on-the-job construction.

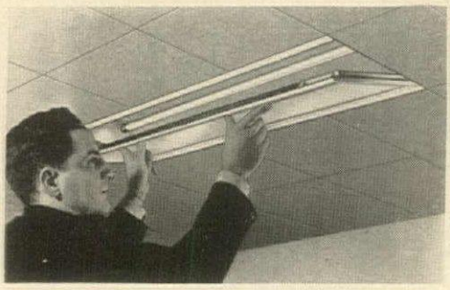
You will be interested, too, in the *flexibility*, *versatility* and *color* that contribute to this new approach to classroom design. Write today for comprehensive catalog.

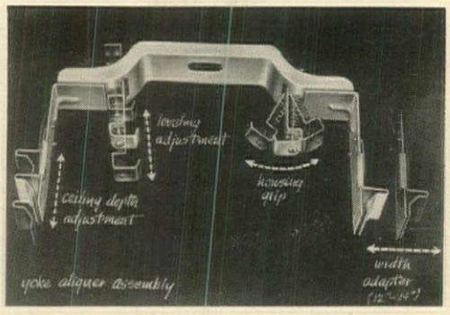
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PRODUCTS

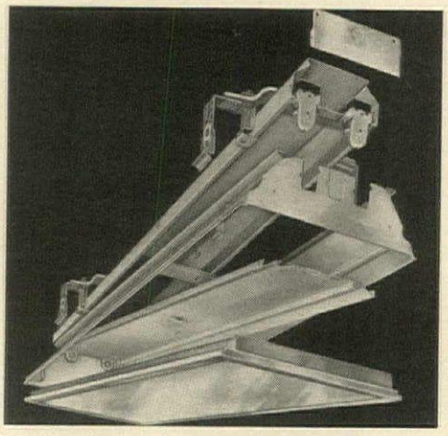
Continued from p. 246





RECESSED TROFFERS swing into line easily on yoke hangers

One man armed with a screwdriver can install any of Smithcraft's *Architectural Troffers*. He does not even need a ruler to take measurements, as the fixtures adapt automatically to different ceiling conditions and varying opening dimensions. Available with a wide choice of diffusing media, the troffers are engineered on a precise 1′ module and come with or without flange trim. Key to their uncomplicated (and economical) installation is an ingenious yoke-aligner hanger assembly which adjusts in all directions to level the fixtures in practically any ceiling construction. The yoke expands from 12″ to 14″ crosswise and allows the housing to slide longitudinally and move laterally. In placement on a suspension system a clip locks the yoke to ceiling members and one edge of the troffer is hooked onto the bracket. (Framing provisions also can be made for plaster ceiling.) The 22-ga. steel reflector is attached by a quarter-turn of a thumb screw and the troffer secured in place by tightening two captive screws at each end. It is then raised or lowered until level with ceiling face by adjusting the two screws on each hanger. On fixtures with glass or plastic dish diffusers the door frame is hooked on two grips and pressed up to lock in place. Once closed, the diffuser latch responds to upward pressure by

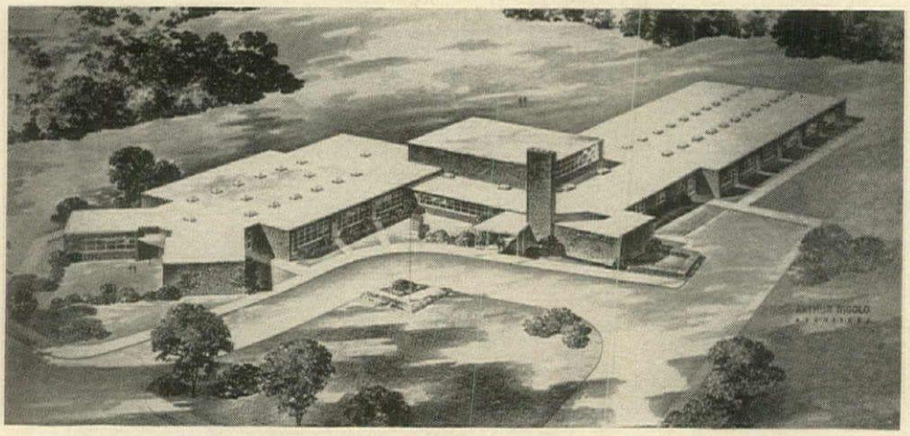


swinging open. Louvered troffers can be hinged from either side and removed without tools for access to wiring plate. Any of the models can be grouped in numerous geometric patterns and spotlight boxes, designed on the 1′ module, may be included wherever necessary. On flanged troffers, the trim is integral on the sides and end pieces are slid into position on installed fixtures. Prices on the series, all UL approved and available with Bi-pin, rapid-start and slim-line lamps, start at $32.28 for a steel louvered unit and go up to $117 for an 8′ plastic-louvered model.

Manufacturer: Smithcraft Lighting Div., Chelsea 50, Mass.

continued on p. 258

Fairlawn School Chooses POREX Roof For Insulation, Plus Sound Control at Minimum Cost



JOB: Thos. A. Edison School, Fairlawn, N. J.
ARCHITECT: Arthur Rigolo, Clifton, N. J.
CONTRACTOR: Purcell Bros., Ridgefield Park, N. J.

Over 40,000 sq. ft. of Porex with 1/2" field applied nailable cement finish was used on this school. Porex was cast to suit the bulb tee subpurlin spacing. The underside of the slab was treated with our white acoustical color coating.

For roof decks of schools, architects quite naturally specify Porex. What other low cost roof deck construction offers all these quality features.

- **Heat Insulation**
- **Sound Control**
- **Nailability**
- **Lightweight**
- **Long Span**
- **Incombustibility**
- **Acoustical Color Coating**
- **Adaptability to Wide Range of Span and Types of Supporting Framing**



POREX MANUFACTURING CO., North Arlington, N. J.
Precast lightweight concrete products since 1920
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When there is more "out there"



in here, the kids are happier

Nothing frustrates a youngster faster than being shut in. All he can think about is getting out.

That's why you see Daylight Walls with their clear glass from wall to wall and sill to ceiling in so many new schools.

They cut costs, too. Artificial lighting isn't needed so much. There's less wall area to paint and maintain. Even construction costs are lower. In cold climates, your Daylight Walls should be *Thermopane** insulating glass for the greatest comfort and heating economy. For more product information, call your local Libbey · Owens · Ford Glass Distributor or Dealer (listed under "Glass" in the yellow pages of your phone book). *®

Write today for this free book. Complete information and illustrations on school daylighting. Dept. 42105, Libbey · Owens · Ford Glass Company, 608 Madison Ave., Toledo 3, Ohio.



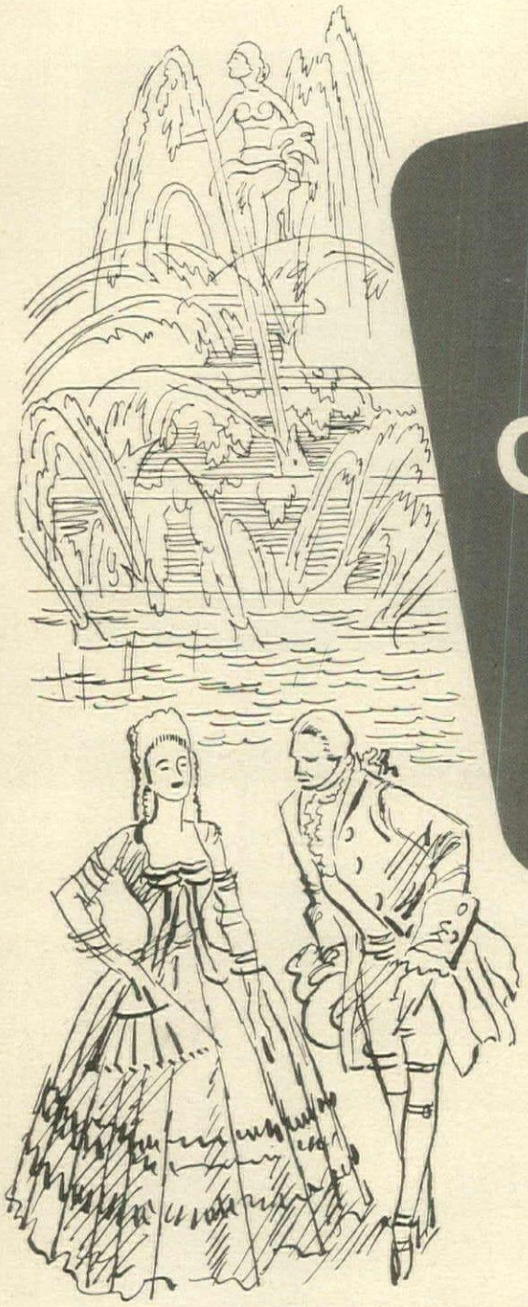
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DAYLIGHT WALLS

. . . THAT LET YOU SEE

LIBBEY · OWENS · FORD GLASS CO., TOLEDO, OHIO



ONLY PERMANENT CAST IRON SOIL PIPE AND FITTINGS HAVE PASSED THE TEST OF TIME

CAST IRON is the *only* pipe material that has passed the acid test of time—*generation after generation.* Claims made for "equal performance" by substitute materials are based on the experience of a comparatively few years, since none can boast the long record of economy and efficiency of Cast Iron Pipe and Fittings.

As many of America's older homes are razed to make way for newer structures, the original Cast Iron Pipe has been found in such excellent condition that it can be re-used 100%.

Better Today Than Ever Before

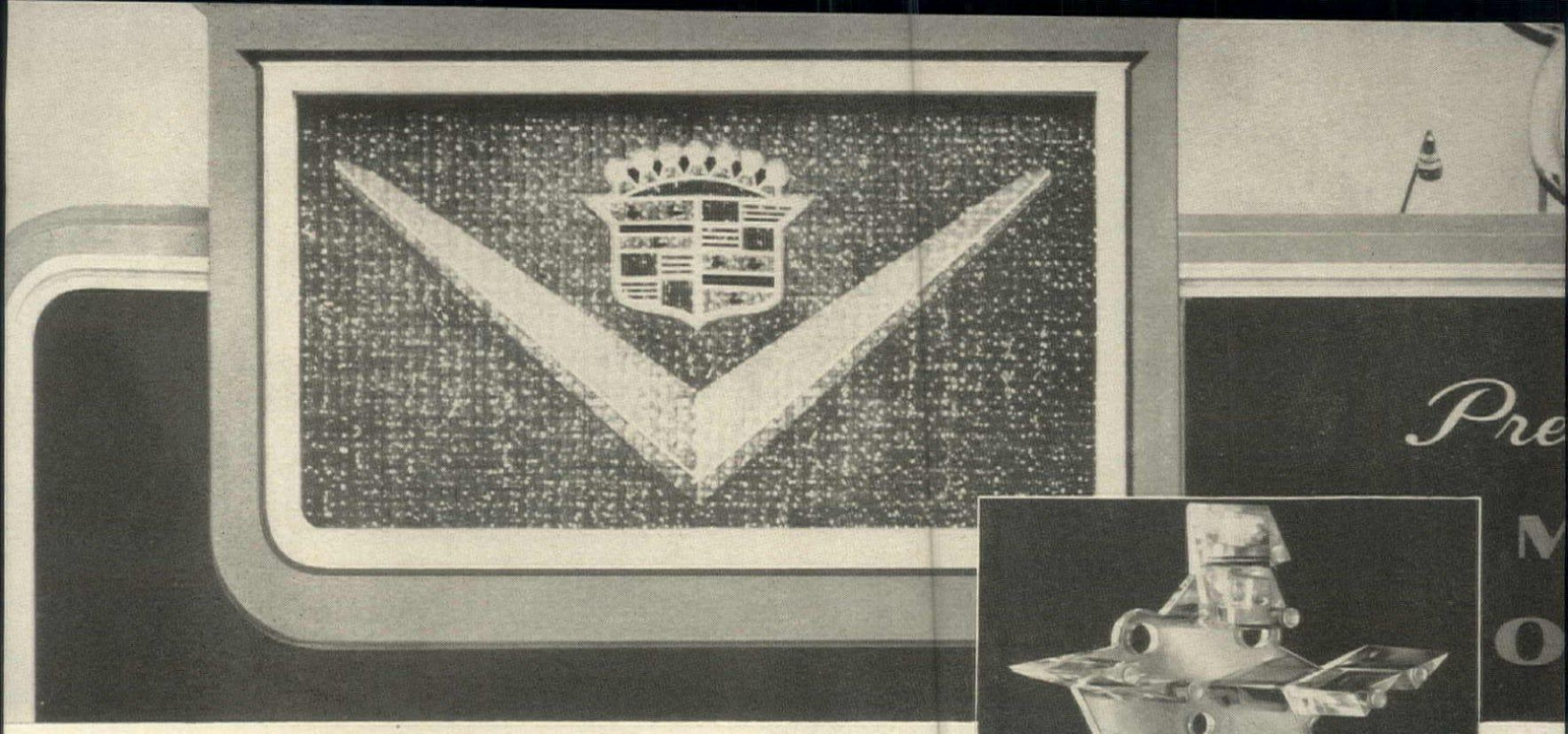
Thanks to research, better pig iron, close controls of iron analysis, new and improved processes, rugged and durable modern Cast Iron Soil Pipe is definitely *stronger, tougher, more uniform in quality* and *more economical* than ever before. That is why it is the first choice of architects and builders who recognize that the only sound foundation of a good reputation is specifying quality materials that will never cause comebacks or complaints.

* * * * *

Our Company does not manufacture pipe, but has long supplied the nation's leading Cast Iron Pipe Foundries with high grade quality iron from which permanent Cast Iron Pipe is made.

WOODWARD IRON COMPANY

WOODWARD, ALABAMA



What's behind this spectacular's new sparkle?

40,000 REVOLVING PRISMS OF DU PONT *LUCITE*®!

Housed directly behind the emblem on this new outdoor sign are 40,000 prisms molded of "Lucite" acrylic resin, stacked on 49 columns. The prisms rotate, catching the light from a battery of lamps and breaking it up to create sparkling, jewel-like effects. These effects are visible at great distances. Even in daylight or fog the sign has an extraordinary brilliance.

Why was "Lucite" acrylic resin chosen for these prisms? The designer of this unique sign, Rudolf Pabst, President of Prism Signs, Inc., San Mateo, California, explains: "We use 'Lucite' because of its superior light-transmitting properties. It resists breakage and high heat, and stands up well to weathering. Another consideration – 'Lucite' acrylic resin can be molded efficiently and economically."

For further information on "Lucite" for signs – as well as data on "Lucite" for lighting applications – mail the coupon.

CLOSE-UP of the 25° injection-molded prism of "Lucite" acrylic resin. The designer found "Lucite" an excellent material for this application – with outstanding optical properties, strength and weather resistance.



RUDOLF PABST, inventor of this unique spectacular, checks a prism rotor. Tough, durable gears and bearings of "Zytel" nylon resin are used to assure dependable operation of the 49 shafts on which the molded prisms are mounted. Bearings and gears molded of "Zytel" nylon resin require little or no lubrication. Parts molded by American Molding Company, San Francisco, California.

Good Lighting Is Good Business

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Please send me more information on extruded "Lucite" acrylic resin. I am interested in "Lucite" for: LIGHTING APPLICATIONS ☐; SIGNS ☐.

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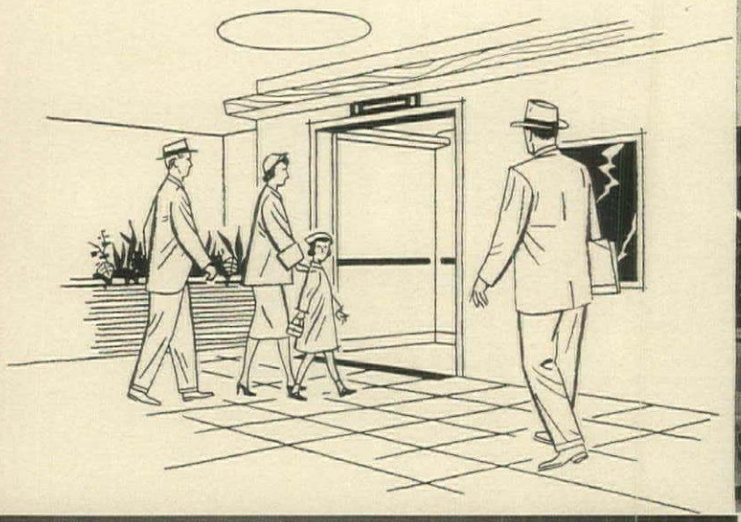
*Position*_____

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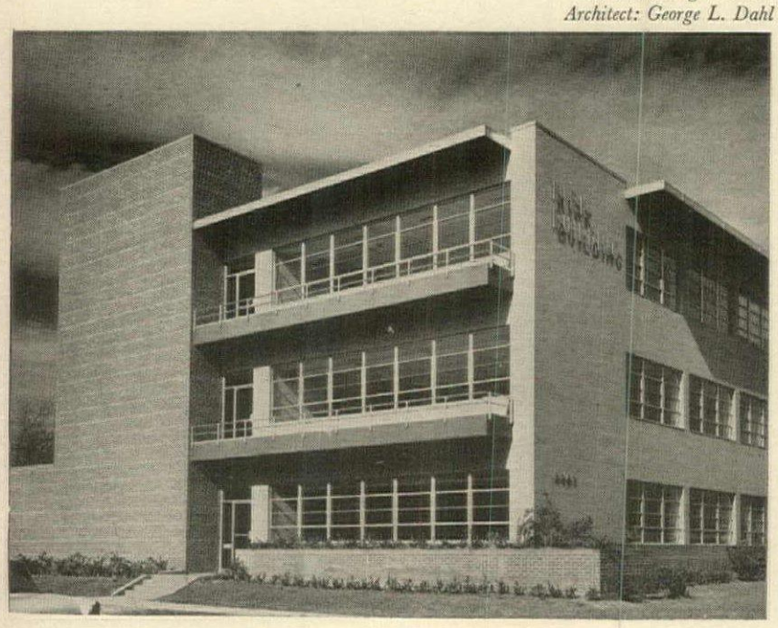






Northwestern Mutual Fire Ass'n—Los Angeles
Architect: Richard J. Neutra

Kirk Building—Dallas
Architect: George L. Dahl



Today's buildings call for modern elevators

Rotary Oildraulic Elevators open the way to improved building designs and lower costs

Rotary Oildraulic Elevators, moved and controlled by oil under pressure, have definite architectural and operating advantages for modern buildings.

No penthouse or heavy sidewalls

The elevator car and its load are supported by the oil-hydraulic jack—not by the building structure. This eliminates the costly, unsightly penthouse that interferes with modern architectural design. It also makes possible a substantial lightening of the hoistway structure.

Flexibility in power unit location

Rotary's compact power unit can be placed in any convenient location where a pipeline can be run from the

Rotary®

Oildraulic®

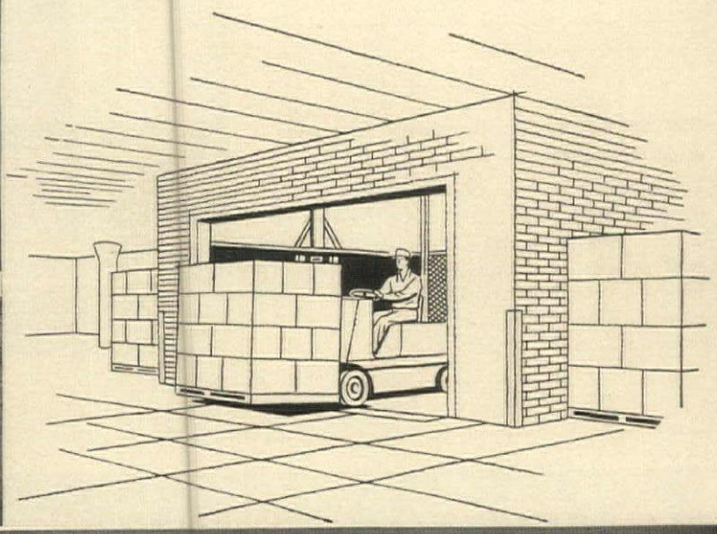
ROTARY LIFT CO.

1011 Kentucky, Memphis 2, Tenn.

SEE OUR FILE IN SWEET'S



Hampton Village Shopping Center—St. Louis
Architects: Preston J. Bradshaw, I. M. Pei



unit to the hoistway. Thus it can be located in an area with other building machinery for convenience in servicing and to save space. Or it can be placed in a small machine room built to accommodate the power unit being used on the installation.

Smooth starts, accurate landings

The revolutionary Rota-Flow oil-hydraulic power unit gives velvet-smooth starts and cushioned stops. Oildraulic automatic floor leveling positions the car to each landing with exactness—¼" accuracy guaranteed! The new patented Oildraulic Controller handles the functions of eight separate control valves . . . simplifies adjustments and maintenance.

Coast-to-coast service

More than 100,000 Rotary Oildraulic elevators and lifts have been installed and are serviced by Rotary's nationwide distributor organization. Our Engineering Department will be glad to assist you on plans and specifications for passenger or freight elevators.

Write for catalog and
complete architectural data.

Elevators

(FREIGHT OR PASSENGER)

Engineered and built by Rotary, world's oldest and largest maker of oil-hydraulic lifts.



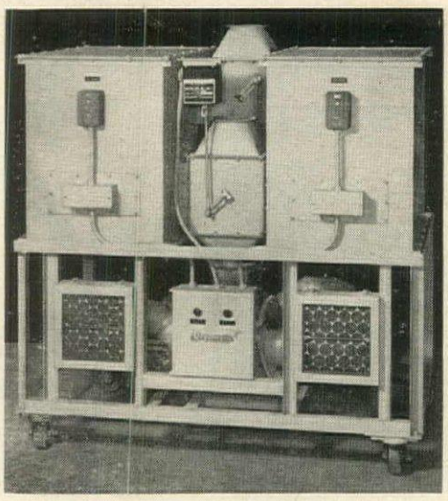
Atlantic Permanent Building & Loan Ass'n—Norfolk
Architect and Builder: Bank Building & Equipment Corp. of America

Illinois Institute of Technology, Chemistry Bldg.—Chicago
Architect: Mies van der Rohe. Assoc. Architects and Engineers: Friedman, Alschuler & Sincere



PRODUCTS

Continued from p. 252



AIR DRIER keeps humidity low over wide temperature range

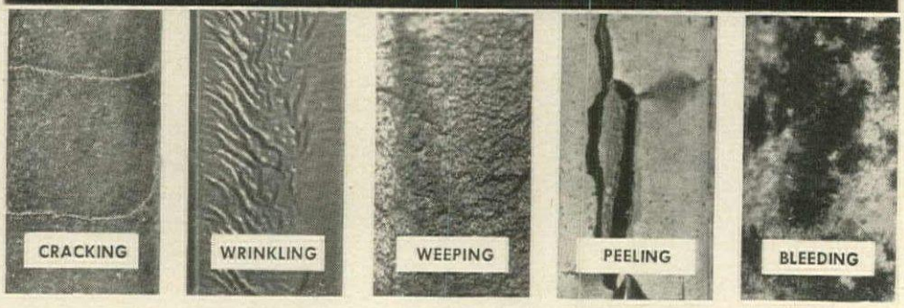
Using alternate towers of silica gel as its drying agent, the heavy duty *Dryomatic T-150* adsorption-type dehumidifier is well suited for factories and warehouses where constant control of humidity is necessary. When one of the *T-150*'s tower becomes saturated, a unique four-way valve directs the air to the other until the first is regenerated by electric heating elements, and then back for a constant flow of dry air at the rate of 150 cu. ft. per min. Thermostats regulating the regeneration cycle adjust the machine to different atmospheric conditions. Installed in chemical and processing industries the *T-150* soaks up 5 lb. of moisture per hour and can maintain 10% humidities in an area up to 60,000 cu. ft. Compact for its capacity, the unit measures 51" x 28" x 44" and weighs about 400 lb. Fitted with casters, the big automatic drier is most directly useful in construction work as a device for rapid room-to-room drying of plaster. The *Dryomatic T-150* can also be used with air-cooling equipment for low-temperature, low-humidity installations. Its case finish is light gray enamel and approximate price is $1,160 FOB Alexandria, Va.

Manufacturer: Dryomatic Corp., Alexandria, Va.

Again TREMCO Revolutionizes Glazing Compounds

NEW TREMGLAZE* WITH TREMTHOL®

The New Safe Specification for Modern Glazing of Modern Windows



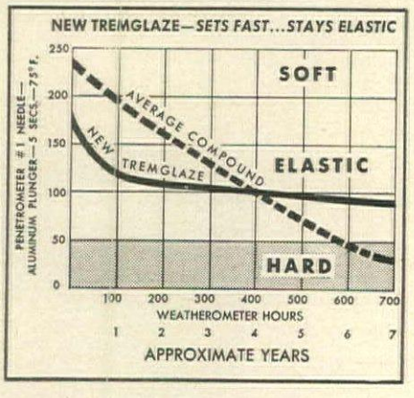
Eliminate These Costly Glazing Problems

Modern metal sash, with deep rabbets, large glass areas, insulated glass, and ventilating type windows have created *new* problems in glazing. Now modern technology, through the development of Tremthol, a *balanced* blend of synthetic ingredients, makes possible *new* Tremglaze—the first glazing compound to combine a *fast setting* quality with *long elastic life.* In two or three weeks, new Tremglaze sets as firmly as typical mastic glazing compounds do in 1-1/2 years—then provides years of lasting protection. For safety—specify Tremglaze for *all* metal windows.

* Tremglaze—the *first name* in Mastic Glazing Compounds.

The *last word* in safe specification for: aluminum, stainless steel, and galvanized-bonderized windows.

You should know the complete story of revolutionary new Tremglaze. Send today for the "Tremglaze Brochure".



TREMCO
PRODUCTS AND METHODS FOR BUILDING MAINTENANCE & CONSTRUCTION

SETS FAST. No wrinkling • No sagging • No cracking • No bleeding • No weeping

STAYS ELASTIC. Bonds securely • Sets through its entire body • Reduces window breakage • Needs no painting • Weather-tight

LASTING PROTECTION. Long lasting weatherproof seal • Prevents moisture infiltration • Reduces corrosion • Neat—attractive appearance

THE TREMCO MANUFACTURING CO., Cleveland 4, Ohio—THE TREMCO MFG. CO. (Canada) LTD., Leaside, Toronto, Ont.



WATER SOFTENER in stylish housing regenerates automatically

In the many areas of the US where water is mineral laden, softening equiment is not a luxury but a necessity for motels and apartments as well as homes. Fashioned to fit with today's kitchen or laundry appliances the new white porcelain cased *Du-Wal* is equipped with an electric timer which regulates the softening and clarifying cycles automatically according to the water consumed and its specific hardness. It has no dial to turn; not even a button to push. The appliance, selling for about $450 installed, absorbs 24,000 grains of hardness between regenerations, and has a flow rate of 10 gal. per min. As protection against any kind of corrosion, the unit's tanks are porcelain coated and its brass and copper fittings have plastic insulators between unlike metals.

Manufacturer: Du-Wal Inc., River Grove, Ill.

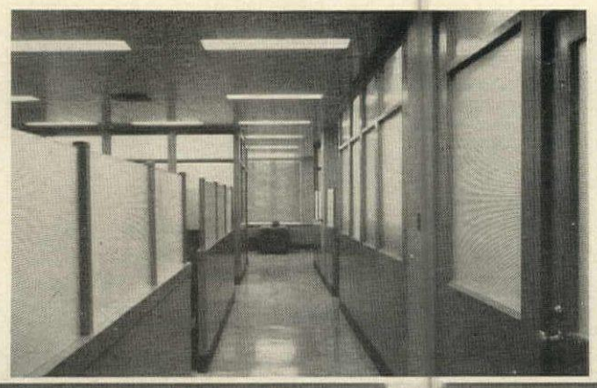
continued on p. 264

El Paso Natural Gas Co.,
El Paso, Texas

Architects: Carroll & Daeuble,
El Paso, Texas

Glazing by Pittsburgh Plate Glass Co.,
El Paso, Texas

Another decorative, translucent, Mississippi Glass pattern, Magnalite B is also used extensively for partitions.





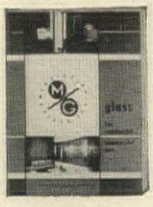


GLASS eliminates "fenced-in" feeling for Texans



This dramatic backdrop of rythmic, Structural Corrugated Glass efficiently partitions this office and foyer without the complete separation demanded by a conventionl blank wall. Translucent, light diffusing glass embodies the finest in modern, functional design, for it floods adjoining areas with copious quantities of softened, "borrowed light", yet completely protects privacy. Figured glass partitions make offices seem larger, brighter, more comfortable and cheerful ... eliminate that "fenced-in" feeling often experienced within walls of other materials. And glass is so practical as well as beautiful ... never wears out, never needs painting, always looks new.

Make daylight a part of your plans. Specify glass by Mississippi. Available in a wide variety of patterns and surface finishes at leading distributors of quality glass.



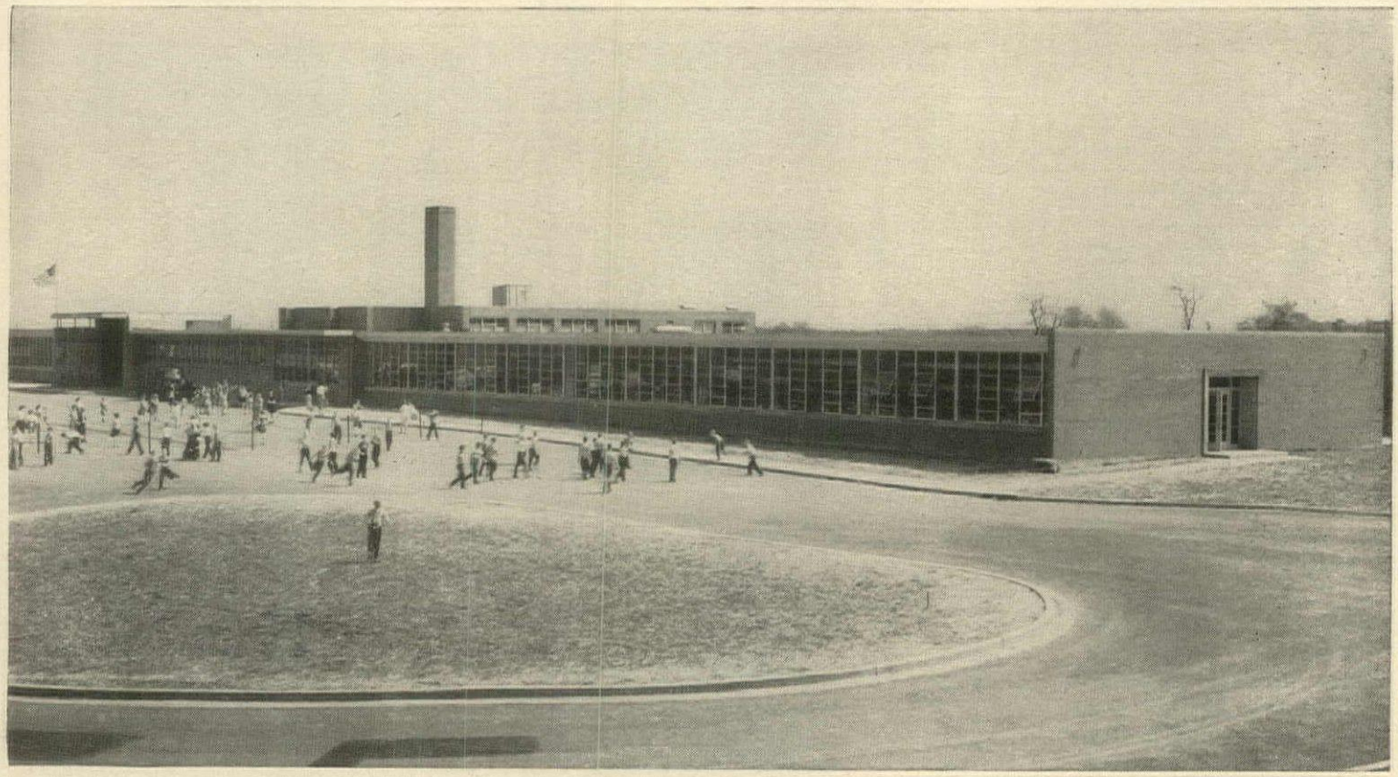
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MISSISSIPPI Glass COMPANY

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See our catalog in Sweet's or write for copy

WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

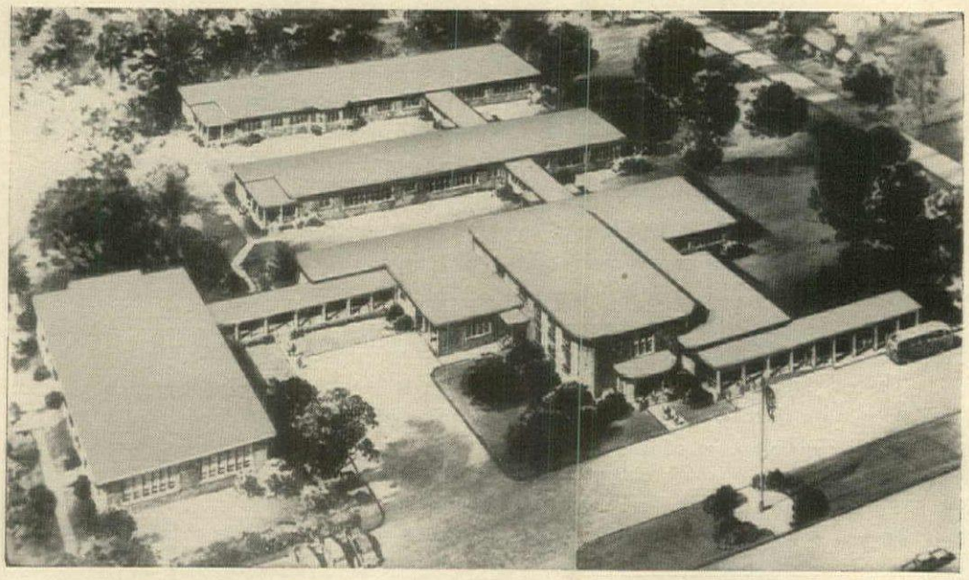


In Pittsburgh, Pa., the economy and labor saving features of Steeltex resulted in a decision to use Steeltex in the Roberts Elementary School in Penn Township. Architect: Joseph Hoover, A.I.A., Pittsburgh. Contractor: Branna Construction Corp., Pittsburgh.

Faster Construction At Lower Cost Makes STEELTEX® A Natural For New Schools

Construction is started on 20 new schools every working day in the year somewhere in the United States. Yet we can't keep up with the demands for more schools.

We will be 176,000 classrooms short of our needs by 1965 even at the present building rate. School officials trying to cope with this situation face a tough financing problem. Because it's hard for them to get the money they need to build new schools, they must get the greatest possible value for every dollar they spend.

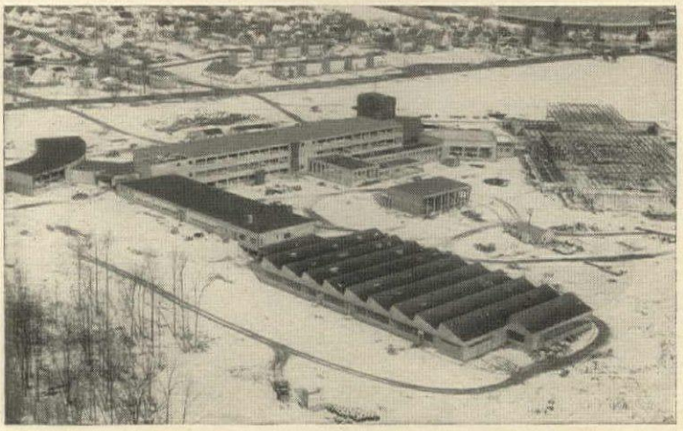


In Brownsville, Fla., cost of construction was a big factor in building junior high school. Steeltex helped stretch construction dollars. Architect: Frank Sindelar, A.I.A., Pensacola, Fla. Contractor: E. M. Hall Construction Co., Pensacola.

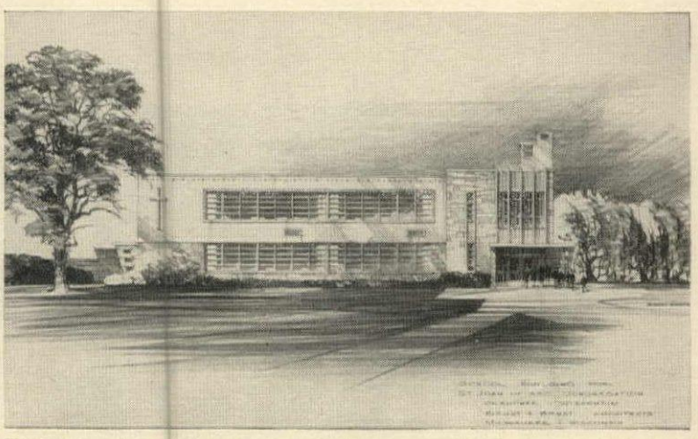
Pressure is on architects and contractors to use better materials which provide savings and speed construction of well-designed, sturdily-built schools. That's one big reason why more and more Pittsburgh Steeltex is being used for reinforcing in floors and roofs—it provides a better construction job faster and at lower cost.

Steeltex, the wire mesh lath which carries its own form right on its back, was the choice of architects and contractors for the representative new schools pictured on these pages. These jobs are typical of large and small public and parochial schools in all parts of the country which are being built with Steeltex because it helps answer the all-important question: "How can we make the best possible use of the limited funds available?"

The men responsible for designing and building these school buildings have this to say about Steeltex:



In Ann Arbor, Mich., a new $6.5 million high school used Steeltex for about 300,000 square feet of floors and roof decks. Architect: Fulton, Krinsky & Dela Motte, Cleveland, Ohio. Contractor: Sorensen-Gross Construction Co., Flint, Mich.



In Okauchee, Wisc., good design and sturdy construction were the keynotes of the St. Joan of Arc School. Steeltex went into all floors. Architect: Brust & Brust, Milwaukee. Contractor: Oliver Construction Co., Oconomowoc, Wisc.

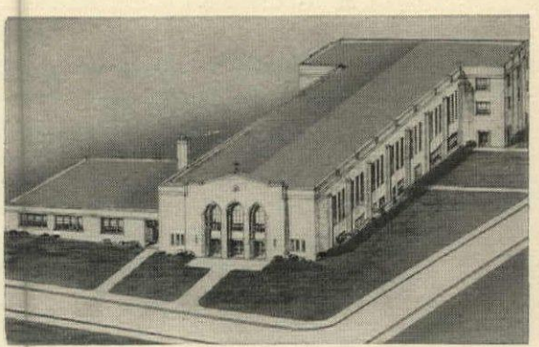
Architect: "Steeltex gets credit for contributing to a very low construction cost—$1 per cubic foot. Construction with Steeltex is faster, easier, without leak-through; the slab is stronger and the weight distribution is more even. Use of Steeltex helped us meet the budget requirements of our client. It is an ideal form for concrete floors and suspended decks."

Contractor: "We used Steeltex because it is low in cost, is easy to handle and provides strong floors which can be built faster. Steeltex cut our floor construction costs by approximately 20 per cent. It is economical to install, makes forms unnecessary, and is readily available. The water resistant backing on Pittsburgh Steeltex holds the water in the concrete and prevents drip, maintaining the proper ratio of the mix and permitting the concrete to cure uniformly."

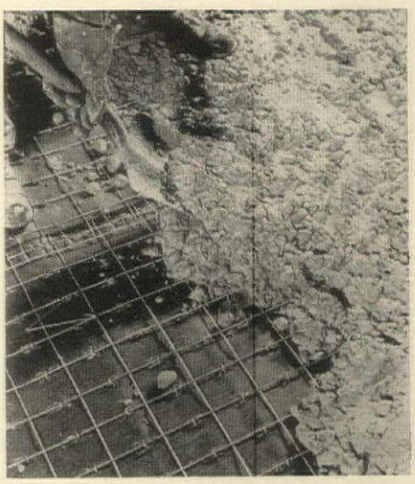
School Board Official: "We conferred with our architect and contractor and learned that Steeltex would reduce the cost of our school substantially if we used Steeltex instead of a more costly type of steel flooring. We were still able to maintain exacting high standards which we had originally established. We changed our plans and used Steeltex to take advantage of this real saving. Steeltex was a bargain for us."

Wherever the construction dollar must be stretched without sacrificing quality construction, Steeltex can help. If your plans call for construction of a school or any other project with poured concrete floors, roofs, plaster walls or ceilings, or Portland cement (Stucco) exteriors, there is a special type of Pittsburgh Steeltex that can do a better job for you faster at lower cost.

Steeltex offers you the same advantages enjoyed by the designers and builders of the schools pictured here. Call the nearest district sales office to learn how you can do a better job faster with Steeltex. Or you can write to Pittsburgh Steel Products Co. for a free copy of the Steeltex book.



In Cheltenham, Pa., near Philadelphia, speed of installation and economy made Steeltex a good choice for the St. Joseph School and Church. Architect: Gleeson and Mulrooney, Philadelphia. Contractor: James J. Clearkin Co., Philadelphia.



Send for your copy of "Pittsburgh Steeltex—Backbone Of Concrete, Plaster, Mortar."

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WHY MEDUSA INTEGRAL water-repellents . . . are the BEST MOISTURE BARRIER!

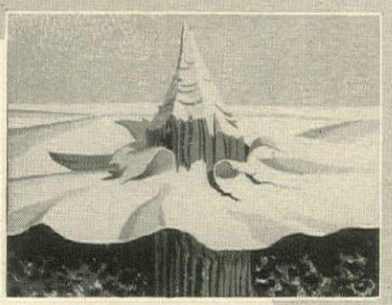
● Medusa Moisture Barriers made with Medusa Waterproofings are water repellent, puncture-proof, tear-proof and non-porous. You simply can't break, rip, or tear them like you can moisture barriers of plastic films, building coatings and the like.

Medusa Waterproofed Cements are integral. Unlike a coating, or a sheet, or a film, they permeate through every square inch of the concrete mass . . . every single pore, making the concrete structure an impregnable fortress against water.

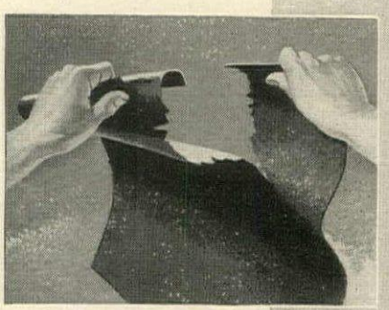
When you can have integral moisture barriers at the same cost as other methods, why take chances with films and coatings. Furthermore, you know Medusa Waterproofed Cements are successful because they have a proved 48-year record of stopping moisture. They are the finest protection possible for footings, foundations, basement floors, utility room and garage floors.

You can make your integral moisture barriers by either using Medusa Waterproofed Gray Portland Cement or Medusa Waterproofed White Portland Cement, or by mixing Medusa Waterproofing Paste or Powder with any regular portland cement.

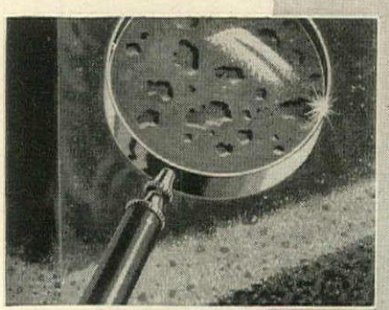




You Can't Puncture Medusa Water Repellents



You Can't Tear Medusa Water Repellents



And Medusa Water Repellents Never Become Porous!

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WHITE TILE GROUT CEMENT

MAKERS OF AMERICA'S FINEST PORTLAND CEMENTS FOR OVER SIXTY YEARS

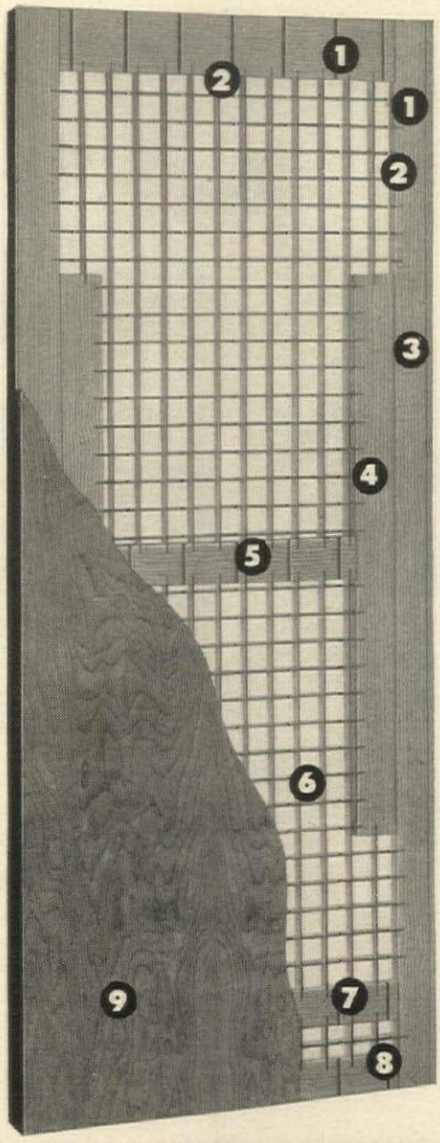
new in concept .. yet *Proven* in service!



PAINE REZO®

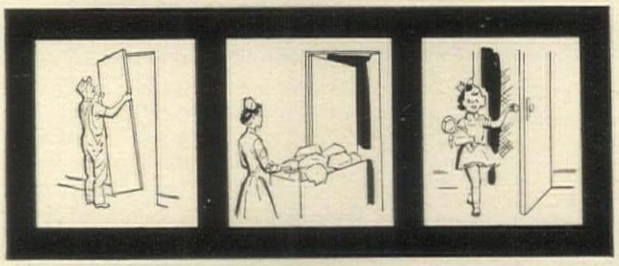
INSTITUTIONAL DOORS
with air-vented, all-wood grid core

- **Proven dimensional stability . . . lightness . . . strength for lifetime service!**
- **Built for use with special hardware. Convenient to specify—no need to write detailed specifications of extra blocking!**
- **Backed by over 7,000,000 successful REZO installations!**



check these exclusive features

1. One rail is 5" wide and can be used as either top or bottom of the door. Stiles are 3" (nom.).
2. Air-vented, all-wood gridwork is carefully mortised into the stiles and rails for greater strength.
3. Matching vertical edge strips can be furnished and finish not less than ½" wide after trimming.
4. Lock area is 6¾" wide and 21" from either end and varies in length proportionate to door height.
5. 3" rail for special hardware is 41" from bottom of door to top of rail unless otherwise specified.
6. Heavy duty 2" x 2" air cell all-wood gridwork interlocked for strength and dimensional stability.
7. 3" rail for kick plate located 10" from bottom of door to top of rail unless otherwise specified.
8. Vent grooves in top and bottom rails help keep moisture content in balance — prevent warpage.
9. Hand-matched hardwood face veneers, 3 ply, of any commercial species. Sanded to cabinetmaker's finish



Lightweight — easy one man installation

Resists Abuse — for lifetime service

Convenient — easy to open and close

Cost? Less expensive than solid core doors yet they're better in every respect! Architects who want America's finest Institutional Doors always specify REZO. For full details, see Sweet's Catalog or write:

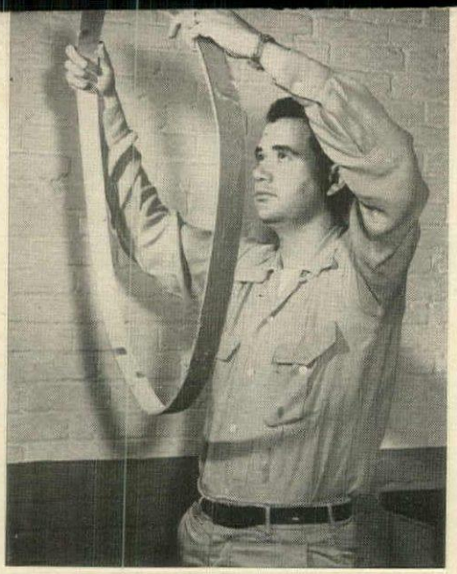
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LUMBER COMPANY, LTD.
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PRODUCTS

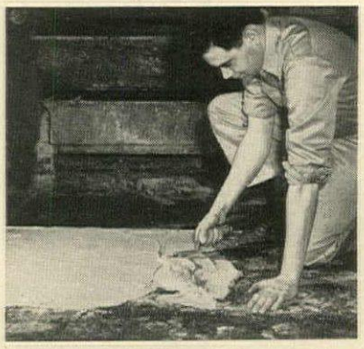
Continued from p. 258

RUBBERY CONCRETE TOPPING has the bounce of hardwood

Dampening shock and sound, US Rubber's concrete and rubber mix *Laticrete* is a practical, comfortable topping for rugged wear floors in factories and chemical plants. Although two thirds as dense as concrete, and holding up under compressive loads of 2,500 lb. psi, the rubber-based flooring is as resilient as hardwood and will not crack under extreme temperature changes. The waterproof, nonslip composition is resistant to alkalis and mild acids. It can be used in its natural gray state or dressed up with pigment for applications in hospital rooms, school corridors and auditoriums, and offices. Shipped as two components—liquid rubber and cement powder—*Laticrete* is mixed on the job and handled like regular concrete or mortar. It may be troweled or buffed to a smooth finish. Its rubber content makes the cured composition so flexible that a long thin strip can be bent by hand into a hoop. The surfacing's special cement gives it excellent bonding to almost any clean hard surface: *Laticrete*'s grip on masonry is 300 lb. psi. It will also adhere to metal, and to glass for a pull of 100 lb. psi.





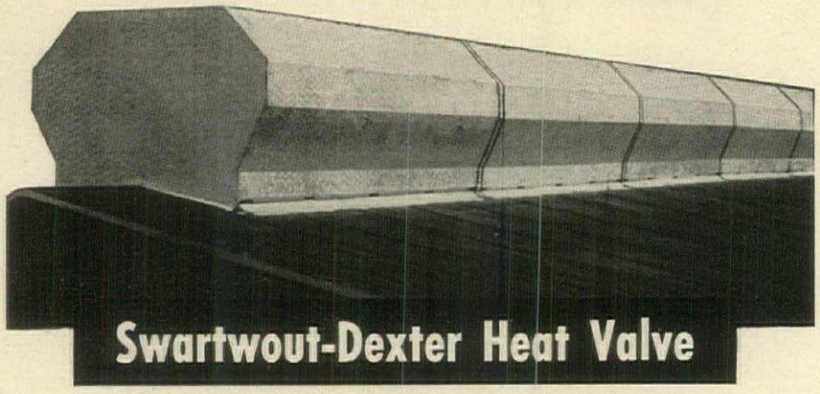


Developed by the firm's subsidiary, Dominion Rubber Co., Ltd., the resilient concrete topping was tested in numerous Canadian industries both in new and repair jobs. It proved useful and economical as cushioning for heavy machinery, waterproofing for storage tanks, patching for concrete walls, noise deadener for hard floors, and skid-proofing for truck ramps. The material sets in a few hours, cures in three days. Cost, somewhat higher than plain concrete but considerably lower than acidproof brick or tile, runs about 60¢ per sq. ft. in the recommended ¼" thickness.

Manufacturer: Naugatuck Chemical Div., United States Rubber Co., Naugatuck, Conn.

continued on p. 272

Simple, practical ventilation
for many kinds of buildings

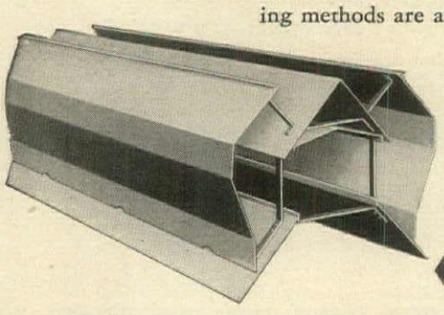


Swartwout-Dexter Heat Valve

The *original* continuous ventilator

The Heat Valve as developed and improved by Swartwout has proved to be one of the most adaptable ventilator designs. Originally applied principally to ridge peaks, its use on slopes or flat roof surfaces has become common. Popular uses in the smaller sizes include saw-tooth construction and skylights.

Heat Valve is designed for maximum capacity with lowest friction, and greatest assistance from outside air currents. It provides practically any area of roof opening desired, at economical cost. Can be quickly and easily installed. Always weatherproof, with fully adjustable damper for exhaust control when needed. Various damper operating methods are available.



Swartwout-Dexter Heat Valve is made in 10 throat sizes, in standard 10 ft. lengths. Can be made of special materials when acid or fume conditions prevail . . . Get the full story — write for Bulletin HV-O.

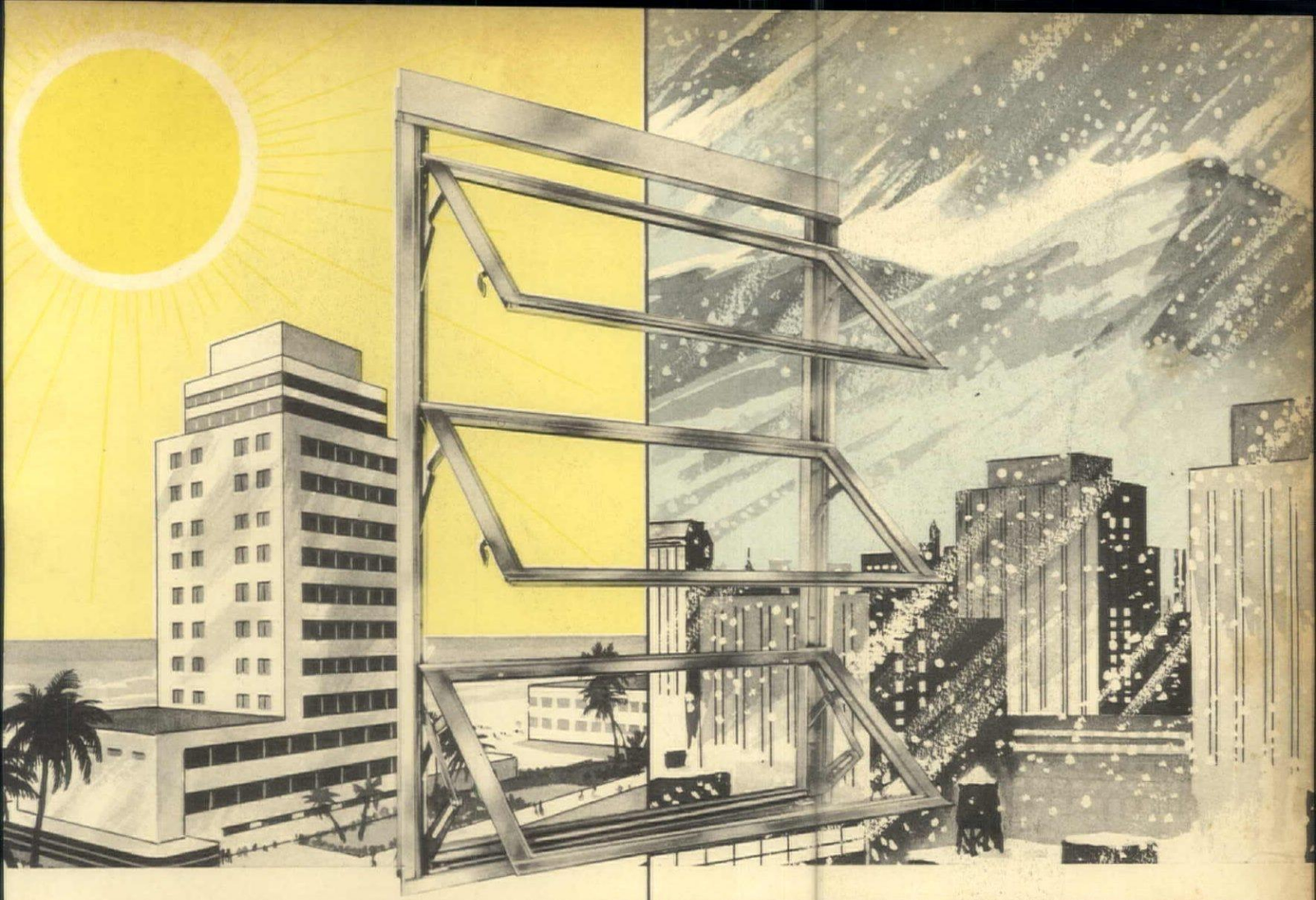
Low overall height of Heat Valve enhances appearance — is an advantage structurally.

18511 Euclid Avenue, Cleveland 12, Ohio

The Swartwout Co.

Roof Ventilators and Ventilating Louvers

POWER PLANT EQUIPMENT • PROCESS INDUSTRY CONTROLS



BECAUSE LUDMAN LEADS IN WINDOW ENGINEERING

LUDMAN Auto-lok AUTOMATIC LOCKING WINDOWS

ASSURE TRUE CLIMATE-CONTROL

AS NO OTHER WINDOWS CAN!



SEALS TIGHTER THAN A REFRIGERATOR

TRUE CLIMATE-CONTROL takes full advantage of Nature's milder moods, yet protects against extremes of temperature. Because Auto-Lok Windows are engineered by Ludman to be the tightest-closing windows ever made .... because Auto-Lok Windows open wide to the breeze .... completely control ventilation .... **TRUE CLIMATE-CONTROL starts with Auto-Lok Windows!**

When Air-Conditioning or Heating units are operating, Auto-Lok Windows seal the heat or cold out .... seal the man-made weather in. A simple flip of a clip allows installation of storm windows (or screens), in an instant.

In mild weather, when windows are open, there is no equal to Auto-Lok. These famous windows provide complete control of ventilation. Both the quantity, and quality, of ventilation is controlled by Auto-Lok Windows, which open from the slightest crack of the exclusive Night Vent, to a full opening of all vents. Auto-Lok Windows can direct entering air .... provide fresh air, even when it's raining.

Because Ludman leads in Window Engineering, Auto-Lok Windows stand alone in performance, appearance, and endurance. Because only Auto-Lok Windows provide full control of ventilation .... because Auto-Lok Windows are the tightest-closing windows ever made .... they do both jobs required of a window for TRUE CLIMATE-CONTROL. Their many operating advantages, their long life, their rugged construction are still more reasons why so many leading architects specify Auto-Lok. **Ludman Engineering Research assistance is available to architects on request.**

ONLY AUTO-LOK MEETS WHAT EXPERTS* AGREE ARE THE 10 MOST IMPORTANT REQUIREMENTS IN A WINDOW

*Geoffrey Baker and Bruno Funaro in "Windows in Modern Architecture"

LUDMAN Corporation
NORTH MIAMI • FLORIDA

LUDMAN Auto-lok

Tightest closing window ever made

LUDMAN LEADERSHIP IN WINDOW ENGINEERING

...Development of the LUDMAN Auto-Lok CONTROL BAR WINDOWS



SEALS LIKE A REFRIGERATOR

Improved Ludman Auto-Lok Control Bar Window opens entirely from inside without touching screen. Pull bar up to open, push down to close. Completely eliminates push-up screens.

Many years ago, Ludman Engineers designed the Auto-Lok Control Bar Window to be used in public buildings like schools, hospitals and institutions. Since then, thousands of installations testify to the popularity of these famous windows. Now, comes another development in their operation and construction . . . *a more simple opening and closing mechanism.* Children find it easier to operate: they pull the bar up to open, push down to close . . . and all vents lock automatically.

Architects find Ludman Auto-Lok Control Bar Windows fit into their designs better than any others. No other school window can compare with its truly modern beauty. Auto-Lok is the only window that meets all ten requirements that experts* agree are essential in a window.

The Auto-Lok Control Bar Window is the tightest-closing window ever made . . . and only Auto-Lok stays tightly closed for the life of the building without the periodic adjustment required by other awning windows. Tightness is an all-important requirement in the design of a school building. Specify Ludman Auto-Lok Windows as the best insurance of your reputation for using the best building products.

*Geoffrey Baker and Bruno Funaro in "Windows In Modern Architecture".

LUDMAN Invited to Participate

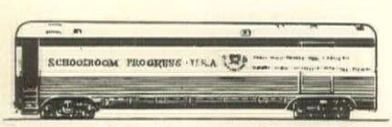
with 26 Outstanding American Manufacturers of School Building Products and Equipment in

SCHOOLROOM PROGRESS, U.S.A.

the traveling exhibition sponsored by the Henry Ford Museum and Greenfield Village and The Encyclopedia Americana.







"Schoolroom Progress U.S.A." is a traveling educational exhibition touring 250 major American cities with an estimated 3,000,000 persons viewing it. Featured are replicas of schoolrooms of 1840 and 1890 contrasted with the ideal classroom of today and tomorrow.

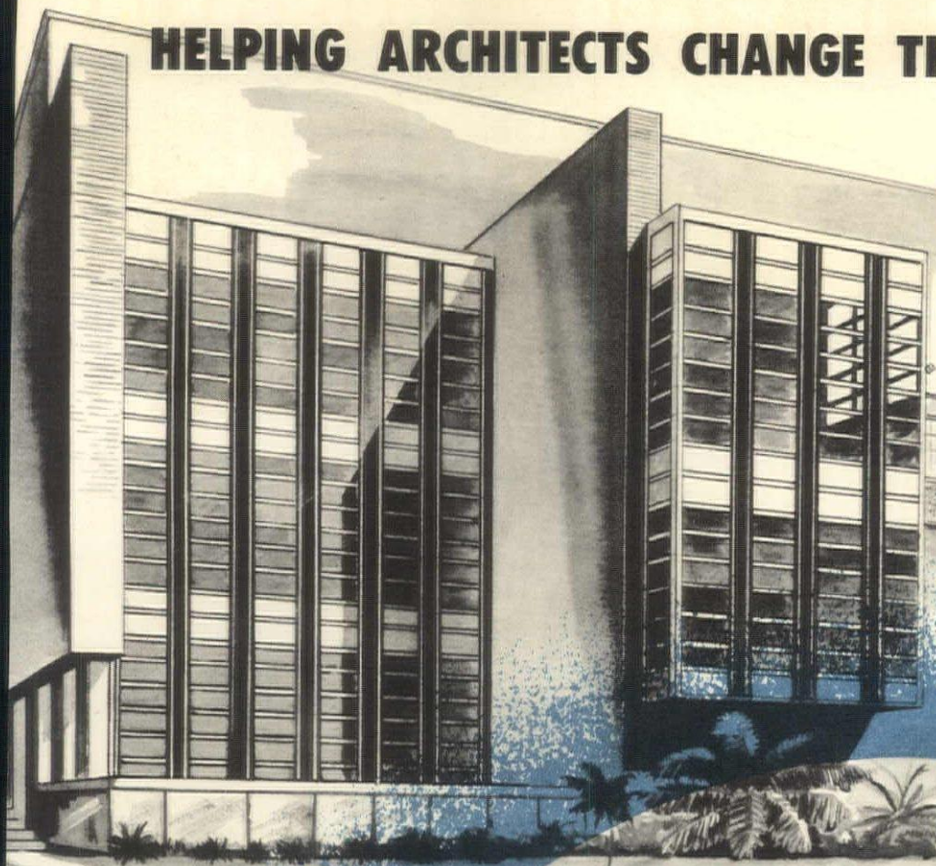
Ludman's Auto-Lok Control Bar Windows, an integral part of today's new schools, are displayed in that part of the exhibit which reveals the latest in classroom architecture for kindergarten, upper elementary, domestic science, manual science, and office practice.

Ludman is proud to participate in a project which represents a major contribution to educational thinking. Ludman invites you to see the exhibit when it comes to your city.

LUDMAN Corporation

NORTH MIAMI • FLORIDA

HELPING ARCHITECTS CHANGE THE FACE OF AMERICA...



North High School, Des Moines, Iowa.
Wetherell & Harrison, Architects.

One of many new schools throughout the country using Ludman Window Panels.

LUDMAN

Window Panels

and

LUDMAN ENGINEERING







Skin-Wall . . . Curtain Wall . . . Panel-Wall . . . these are tools that progressive architects are using to change the face of America. These are the newest methods of the 20th Century — The Century of Construction. They are highly effective means by which architects are speeding up construction . . . reducing costs . . . increasing efficiency . . . creating dynamic new beauty . . . satisfying clients.

To assist the architect in benefiting from these new building techniques, LUDMAN Corporation is proud to present LUDMAN WINDOW PANELS . . . Another Development of Ludman Engineering. Many architects, though tremendously interested in these newest building techniques, have had very little opportunity to become thoroughly acquainted with them. And because every architect either is, or will be, faced with the use of these new building methods, LUDMAN is making an Engineering Service available for consultation from the moment the first rough sketches come off the board. This service is available without cost to the architect.

Now, through the great versatility of LUDMAN WINDOW PANELS, an architect may be confident that he can realize any design he may create. For, on the basic principle of integral wall units that combine window and wall in one easily-handled, quickly-fastened labor-saving unit, LUDMAN Engineering Service can capture any wall treatment the architect may wish to execute.

Here are standard production components that are adaptable to an infinite variety of designs and assure economy in construction. Ludman's Engineering staff will assist you in developing custom made panels where desired for still greater flexibility in design.

LUDMAN Window Panels are built to Ludman's usual high quality standards. Insulated panels, plus Ludman's tight-closing windows (the tightest closing windows ever made), produce a wall with an unusually low Thermal-Conductivity rating.

leads in window engineering

LUDMAN *Weatherstripped*
INTERMEDIATE ALUMINUM
PROJECTED WINDOW



TESTED

10 TIMES TIGHTER
(AIR FILTRATION)

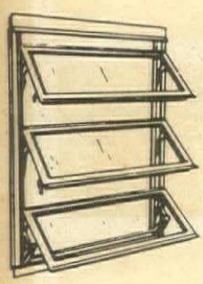
4 TIMES STRONGER
(UNIFORM LOAD)

4½ TIMES STRONGER
(HARDWARE LOAD)

Report on tests conducted by PITTSBURGH TESTING LABORATORY, Pittsburgh, Pa.

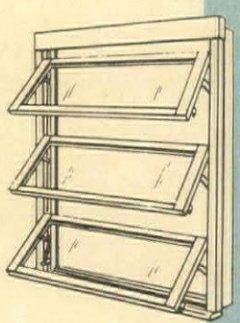
Ludman is proud to report that the results of the test by this highly respected testing organization prove again that Ludman has engineered a superior window product that will stand up under all conditions. This reflects Ludman's basic policy of thorough researching for each new product so that you can stake your reputation without hesitation on Ludman products.

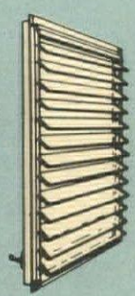
LUDMAN LEADS IN WINDOW ENGINEERING



LUDMAN AUTO-LOK ALUMINUM AWNING WINDOWS
The window industry's most outstanding development . . . . the window that has solved so many of the architect's problems.

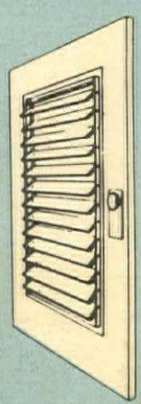
LUDMAN AUTO-LOK WOOD AWNING WINDOWS
The same Ludman quality . . . . the same tight closure . . . . available in wood windows through jobbers everywhere.





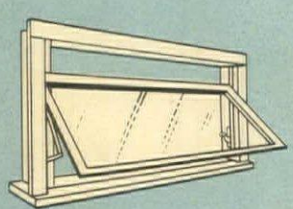
LUDMAN JALOUSIES
Ludman engineering has added more technical improvements to jalousie windows than any other company . . . . produced a jalousie you can specify with confidence.

LUDMAN JALOUSIES IN DOORS
Ludman engineered jalousies available also in doors.



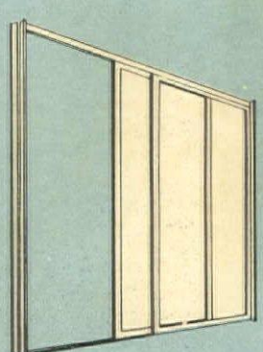
YOUR PRESTIGE IS REFLECTED IN THE PRODUCTS YOU SPECIFY

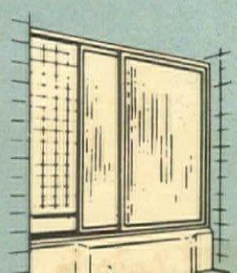
The architect, as do other professional men, cherishes his prestige . . . knows it as his most valuable asset. Fine products . . . products that look better . . . perform better . . . perform well and economically for the life of the building — these are major factors in supporting the reputation of the architect. And the best products cost so little more to install . . . cost so much less across the years. Protect *your* prestige when you specify!



LUDMAN SINGLE SASH WOOD AWNING WINDOWS
A Single Sash Wood Unit with extraordinary design flexibility. Handled by wood jobbers everywhere.

LUDMAN ALL-WEATHER ALUMINUM SLIDING GLASS DOORS
Built to high Ludman standards . . . the only door so completely weather-tight as to be suitable for all climate use.





LUDMAN SHOWER DOOR TUB ENCLOSURE
Top quality fibreglass panels set in beautiful Anodized Aluminum Frames. LUDMAN QUALITY CONTROLLED.

LUDMAN CORPORATION • North Miami, Florida • Dept. AF-10

Please send me full information on the following Ludman Products:

Auto-Lok Aluminum Awning Windows ☐ Wood Auto-Lok Awning Windows ☐
Jalousies ☐ Jalousie Doors ☐ Aluminum Framed Sliding Glass Doors ☐
Shower Door Tub Enclosures ☐ Intermediate Aluminum Projected Windows ☐
Single Sash Wood Awning Windows ☐

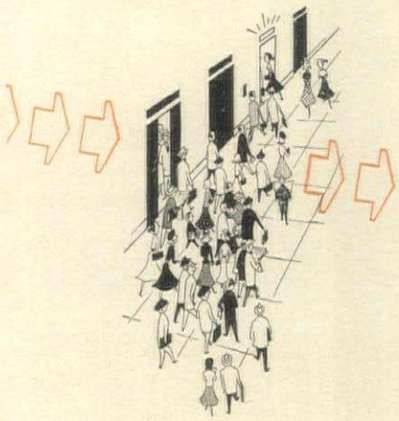
Name.....Firm.....

Street.....City.....Zone.....State .....



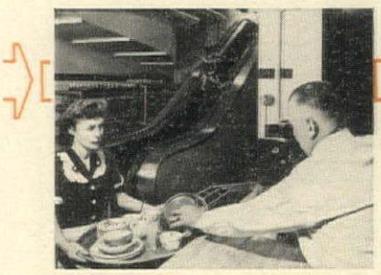
earful from an elevator

This is the Otis ELEVOICE that replaces the missing operator's voice in completely automatic AUTOTRONIC elevators. This voice will announce the floor at which the car has stopped, regardless of the number of floors between stops or the direction of travel. It will caution against delaying the operation of the door, but only when the door operation is being delayed. Too, it will suggest that entering passengers touch buttons for the floors they want and step back in the car. In department stores, the voice can announce the merchandise on sale at each floor, with daily changes. In office buildings, it can call out tenants' names. The voice can be that of a Bostonian, Atlantan, Chicagoan, or the dulcet tones of a well-known movie actress.



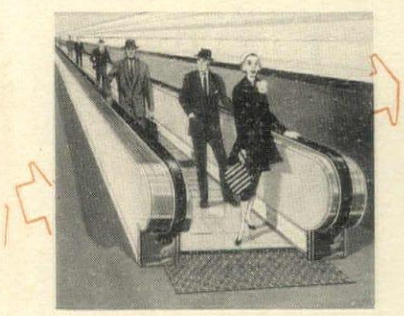
world's safest transportation

Recently, a state legislature approved the use of operatorless elevators. In doing so it based its decision in part on these facts: That automatic operatorless elevators are more than twice as safe as manually operated elevators (long known to be the world's safest transportation); that better than 90% of the elevators now being installed are fully automatic; that the Federal Government itself is installing automatic elevators; that relatively few elevator operators will lose their employment; that most operators are persons who can readily obtain other employment; that automatic operatorless elevators represent the type of progress in our economy that cannot be stopped.



enlarges dining room areas

An Otis escalator can open up normally inconvenient upper or lower floor space for a restaurant service area—and thereby release high-priced ground floor space for increased income! Escalators avoid any objections to stair climbing. A standard 32" Otis escalator provides ample carrying capacity. Its truss-enclosed machine eliminates a costly machine room. A three-section, factory-fabricated truss reduces installation costs. Otis planning engineers are ready to help you and your consultants. This service is free—without obligation.



another OTIS first

It's the Otis TRAV-O-LATOR—quickly described as an escalator that provides horizontal ***contour*** transportation. It can carry people up ramps in sports stadiums, schools and railroad stations; to and from parking areas; up from underground city traffic centers; or overhead across highways, or from airport terminal passenger levels down to airplane boarding points. There's practically no limit to the length, flexibility, or use of the Otis TRAV-O-LATOR described in Booklet A-415.



we couldn't duplicate OTIS maintenance

"Otis Maintenance, which plays a major part in keeping our elevator service at peak performance, differs greatly from the offerings of elevator service companies," says James M. Bradford, Manager of the Dexter Horton Building in Seattle, and Floyd Clodfelter (at left) Chairman of the Board. "Otis Maintenance is 'engineered service' that has been designed to prevent trouble and breakdown, rather than just handle routine oiling and cleaning and the replacement of worn or broken parts after the equipment has failed. As a result, Otis Maintenance cannot be duplicated by any elevator owner, management company or other elevator company at any price."

OTIS ELEVATOR COMPANY, 260 11th Ave., New York 1, N.Y.

OFFICES AND SERVICE IN 295 CITIES ACROSS THE U. S. AND CANADA

directional arrows

for VERTICAL TRANSPORTATION

PASSENGER ELEVATORS

ESCALATORS

FREIGHT ELEVATORS

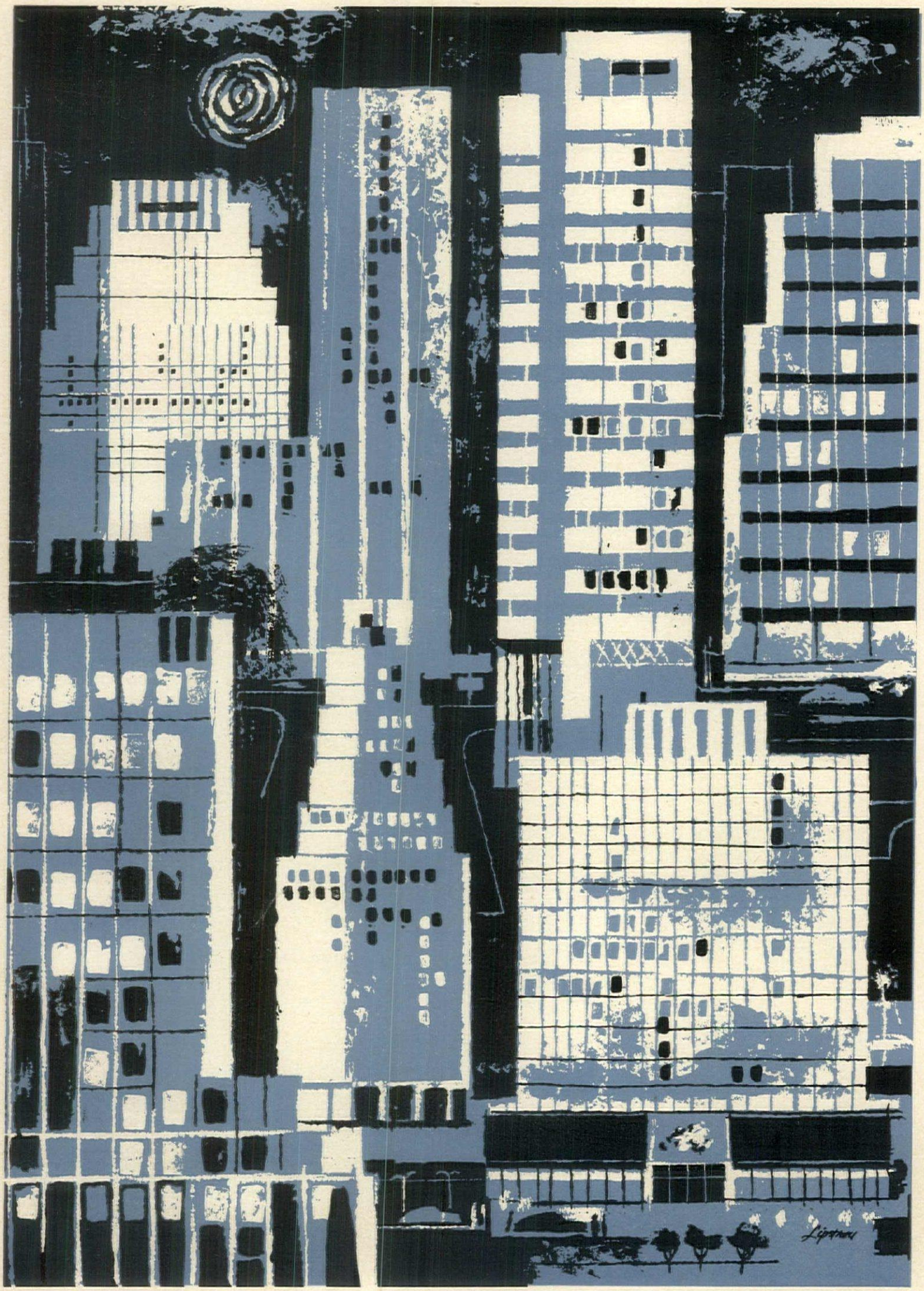
CARS AND ENTRANCES

DUMBWAITERS

MODERNIZATION

MAINTENANCE

Otis



GENERAL BRONZE CORPORATION

adds 2nd National Bank, Houston, Texas, to its

SKYLINE OF

ALCOA ALUMINUM

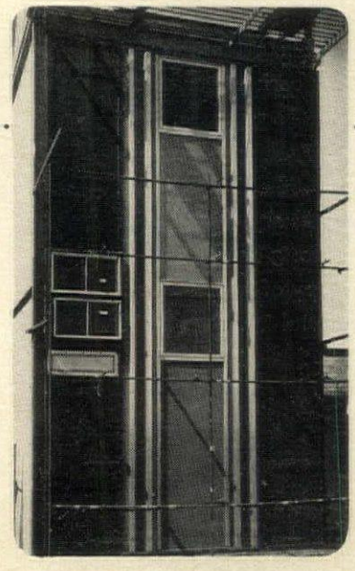


2nd National Bank Building, Houston, Texas. *Architect:* Kenneth Franzheim, A.I.A., Houston, Texas; *Contractor:* W. S. Ballows Construction Co., Houston, Texas; *Aluminum:* General Bronze Corporation, New York, New York.

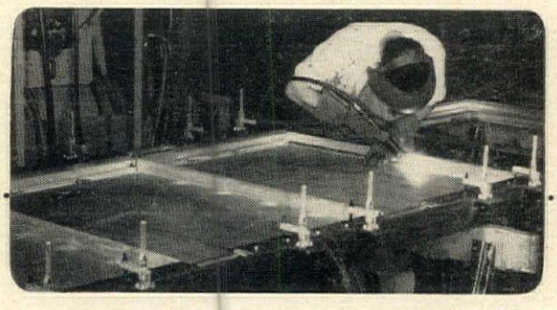
99 and 100 Park Avenue, 260 and 261 Madison Avenue, 60th and Madison Avenue, New York, New York; the Alcoa Building, Pittsburgh, Pennsylvania; Equitable Life Insurance Society Building, Milwaukee, Wisconsin. And now, the 2nd National Bank Building, Houston, Texas. These are a few of the many aluminum sheathed skyscrapers General Bronze Corporation has raised in five years. They form a sky line of which any city could be proud.

One of the oldest architectural metal fabricators in the country, General Bronze Corporation's services complement the architect's designs by performing the fabrication and installation. Working closely with Alcoa over many years, they have a fund of knowledge concerning aluminum sheathed buildings that makes these services invaluable to the architects and owners who employ them.

For full information on Alcoa® Aluminum clad buildings, their advantages and their fabricators, call your local Alcoa sales office. Or write ALUMINUM COMPANY OF AMERICA, 1887-K Alcoa Building, Pittsburgh 19, Pennsylvania.



General Bronze testing tower with panel from 2nd National Bank Building ready for air and watertightness test.



Welding curtain wall panel for 2nd National Bank Building at General Bronze Corporation's Garden City, Long Island, plant.

YOUR GUIDE TO ALUMINUM VALUE

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

©ACOA

LOOK!

Put color to work on classroom walls with this new bulletin board material

4 MODERN PASTEL TONES

*SAGE GREEN	*PUEBLO GRAY	*CORK TAN	*CORAL
No. 752	No. 754	No. 756	No. 758

Classroom walls become more attractive and functional than ever—when you specify one of the four new shades of Armstrong Tackboard.

Armstrong Tackboard colors are easy to work with. They are permanent, too, and won't fade or wear off. Maintenance is negligible—for most soil spots can be removed with a soft eraser. And a quick once-over with mild soap and water makes the whole surface look like new.

Extra benefit: the high light-reflectance of this new cork material actually reduces the eyestrain and nervous fatigue that occur when wall areas are of different brightnesses.

Armstrong Tackboard comes in ⅛" and ¼" gauges, 48" or 72" wide; it can be ordered from leading school supply houses everywhere. For seamless installations, you can get continuous rolls as long as 85 feet.

Write for samples of Armstrong Tackboard and a copy of our new full-color folder today. Armstrong Cork Company, Industrial Division, 8310 Drake Street, Lancaster, Pennsylvania.

Armstrong
TACKBOARD

New *Flexalum*® Audio-Visual blind keeps out 30 times more daylight!





Field tests just completed by a leading independent testing laboratory* show that the new Flexalum Audio-Visual Blind keeps out 30 times more daylight than a fully-closed conventional blind. With the flick of a cord, it turned a sunny classroom into a dark auditorium—easily meeting the requirements of the Illumination Engineers Society for *motion picture theaters!* (Even with an opaque-type projector, the image was reported "clear, sharp, with good color"). Here, at last, is the blind that meets your daily classroom needs for audio-visual instruction at a moment's notice.

Flexalum

FLEXALUM DRAW DRAPERIES

FLEXALUM ALUMINUM AWNINGS

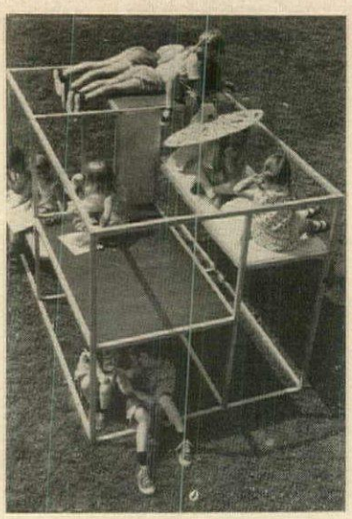
FLEXALUM VENETIAN BLINDS

FLEXALUM AUDIO-VISUAL BLINDS

*Complete 20-page report of tests conducted by U. S. Testing Company sent on request. Write to: Hunter Douglas Corp., Dept. 84, 150 Broadway, New York 38, N. Y. (In Canada: Hunter Douglas Ltd., Dept. 84C, 9500 St. Lawrence Blvd., Montreal, Que.)

PRODUCTS

Continued from p. 264





PORTABLE PLAY APPARATUS comes into classroom on rainy day

Many designers of modern playground equipment delve into psychology for sculptural forms suited to youngsters' needs for expression. Grier Reimer, however, has elected in this *Porta Play* series to refreshen such traditional play places as the sand box, the clubhouse and the cellar door. Sturdily constructed of lightweight, rustproof metals and weather-treated wood painted in sprightly colors, the play pieces resist the ravages of climate and children.

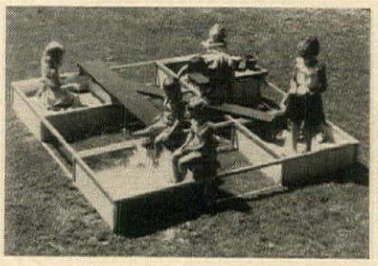
The *Floata Board* (above, right) recreates the lulling movement of the old lawn swing but not the squeak, thanks to a self-lubricating sleeve that never requires oiling. It comes in primary and elementary sizes at $199.50 and $219.50.

Providing fine training for future firemen, the *Climba Pole* (below) has a 10'-high pole of 3¼" poplar to challenge young leg muscles. It sells for $175.50. The four-level *Play House* (above left) of welded aluminum tubing and colored plywood platforms and walls makes a friendly operating base for play supervisors. Its simple form responds readily to children's demands that it becomes space ship, theater or daddy's office. The *Play House* lists at $419.50.

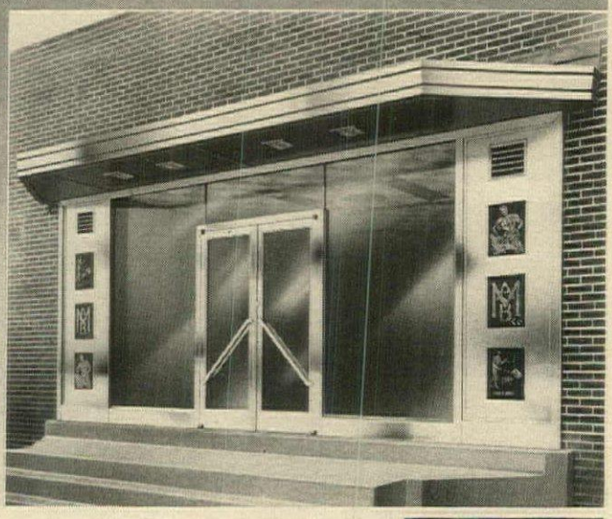


Another center for organized activity is the *Play Box* (below), priced at $409.50,

continued on p. 282



INCREASED ENGINEERING and PRODUCTIVE CAPACITY helps us serve you more effectively



MAIN ENTRANCE to the new home of The Michaels Art Bronze Co., Inc., located in Erlanger, Kentucky, eight miles southwest of Cincinnati, Ohio. This modern structure of approximately 80,000 square feet houses the offices, engineering and manufacturing departments. A second building of 13,000 square feet contains the foundry and pattern shop. These new facilities enable Michaels to coordinate activities, streamline manufacturing operations, and develop new products.

Michaels high-quality metal building products are well-known among architects and builders everywhere, and have become an important part of many of the nation's most prominent structures.

Send us a set of plans for your next project. Here you'll find prices that are right; the very highest quality, and a thoroughly reliable source of supply for everything you need in stainless steel, aluminum or bronze.

THE MICHAELS ART BRONZE CO., INC.
P. O. Box 668-F, Covington, Kentucky
Experts in metal fabrications since 1870

MICHAELS PRODUCTS

- Bank Screens and Partitions
- Welded Doors
- Store Fronts (special)
- Building Skins
- Spandrels
- Louvers
- Windows (special)
- Revolving Doors
- Stair Railings
- Church Work (special)
- Candelabras
- Name Plates
- Letters
- Check Desks
- Lamp Standards
- Marquees
- Tablets and Signs
- MI-CO Parking Meters
- Museum Trophy Cases
- Bronze Inurnment Urns
- Bronze Vases
- Misc. Metal Work

Literature on any or all Michaels products will be sent on request.

KNAPP *MODULAR GRID SYSTEM*

UNIT WALL PANELS

. . . go up in one section FAST

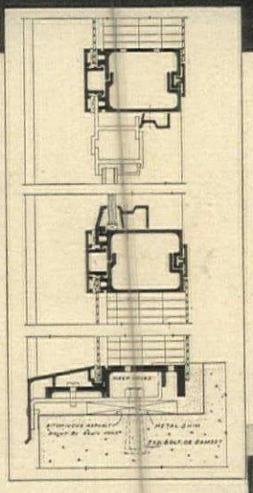


NURSES HOME AND SCHOOL
State Hospital, Jamestown, North Dakota
ARCHITECT: Kurke Associates, Fargo, North Dakota
CONTRACTOR: John W. Larson, Bismarck, North Dakota



Completely shop-fabricated —ready to install

One Manufacturer . . . one responsibility



- **FLEXIBILITY OF DESIGN**—Ventilators, fixed glass and insulated panels can be varied to meet individual job requirements.
- **ATTRACTIVE APPEARANCE**—The neat, trim, streamlined appearance adds to the beauty of today's modern buildings.
- **LIGHTWEIGHT**—Lightweight compared with masonry construction, effecting substantial savings in structural framing and footings.

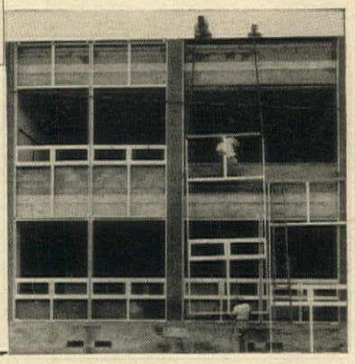
Investigate today the Knapp Modular Grid System engineered and designed for fast, simple erection. Completely flexible, they consist of factory-assembled units in one, or two story sections that go up quickly at substantial savings over conventional wall construction.

Knapp Modular Grid System includes ventilators, fixed glass areas and insulated panels plus all other accessories that make a finished wall system . . . both inside and out. Available in steel or extruded aluminum.

Unit Wall Panels are firmly secured to the structural framing with a minimum of time and effort.

Let Knapp engineers suggest how our Modular Grid System will fit into your building plans.

- **COMPLETE FACADE CONSTRUCTION**—System includes framing to fit all door openings specified by architect . . . a complete wall system from one manufacturer with one responsibility.



Knapp

METAL TRIM Trade Mark

KNAPP BROS. MFG. COMPANY
16 E. 72nd St., Cincinnati 16, Ohio

Knapp Bros. Mfg. Co., Dept. AF-1055
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Cincinnati 16, Ohio

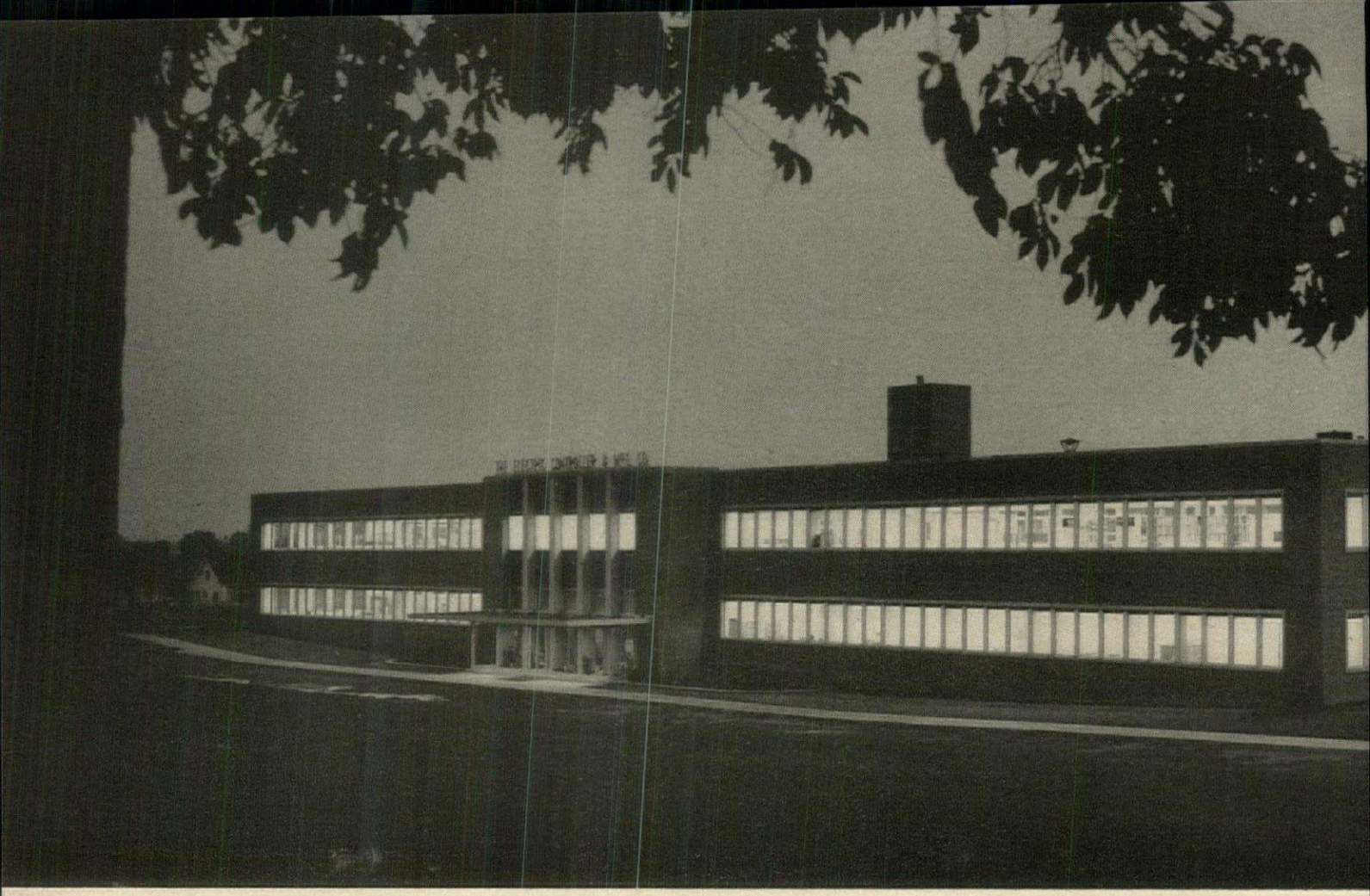
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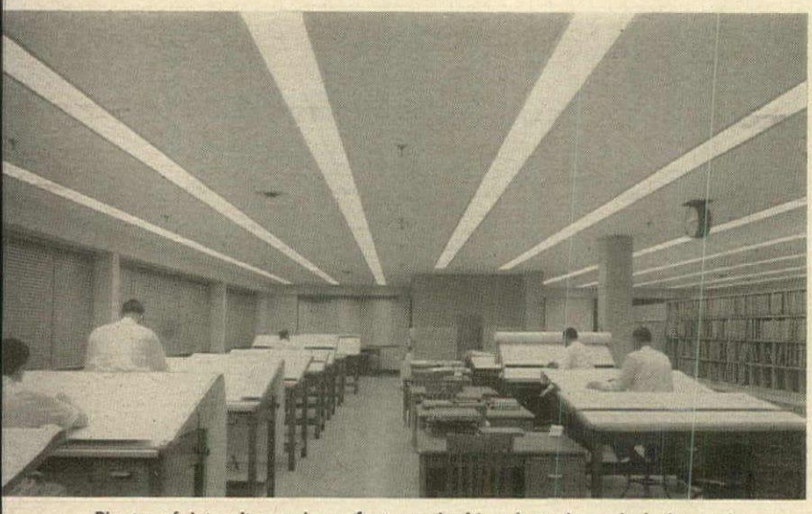
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This outstanding Day-Brite installation is typical of how Day-Brite lighting has complete "across-the-board" applications, regardless of architectural and illumination requirements. It is an example of the unusual versatility of fixtures by Day-Brite—the nation's largest manufacturer of commercial and industrial lighting equipment.

Whatever the nature of architectural and lighting requirements, they can be ideally met by Day-Brite, *the complete line!*

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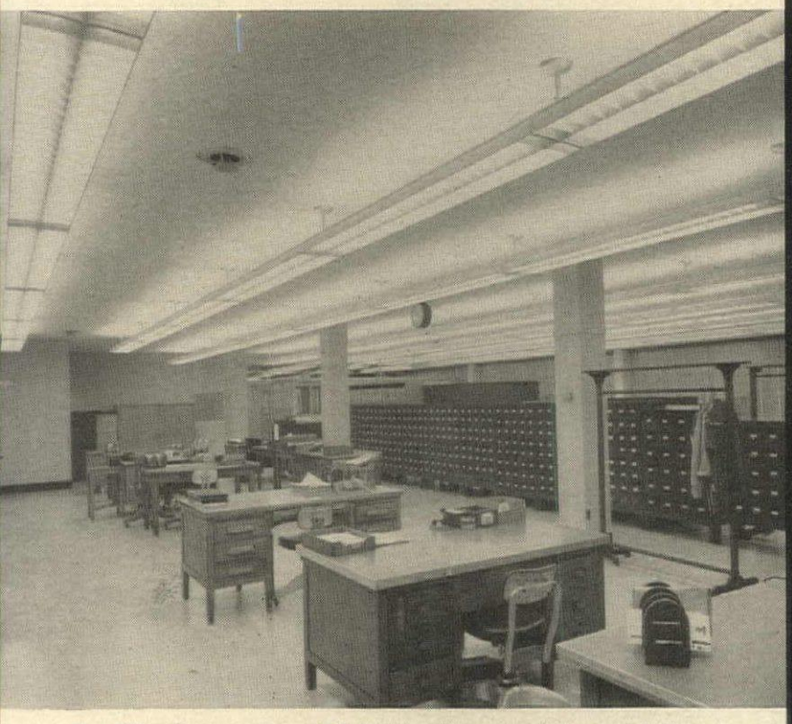
New 340,000 sq. ft. Electrical Controller & Manufacturing Company building, Cleveland, Ohio . . .

Architect: Arthur E. Rowe & Associates, Cleveland

General Contractor: Sam W. Emerson Company, Cleveland

Electrical Engineer: P. C. Mehnert & C. K. Reid, Cleveland

Electrical Contractor: The Herbst Electric Company, Cleveland



Day-Brite continuous Luvex® light this office area. Note straight-line runs and high desk-top visibility.



Day-Brite CFI-10 (Comfort For Industry) with 10% *upward* lighting. Ceiling contrasts are washed out and greater visual comfort assured.

In addition, the following Day-Brite fixtures were also installed: Plexoline,® Ranger,® Strip, Duo-Frame and Exits.



A dependable surface for the flashing speed of hockey at the Jarvis-built Amherst rink

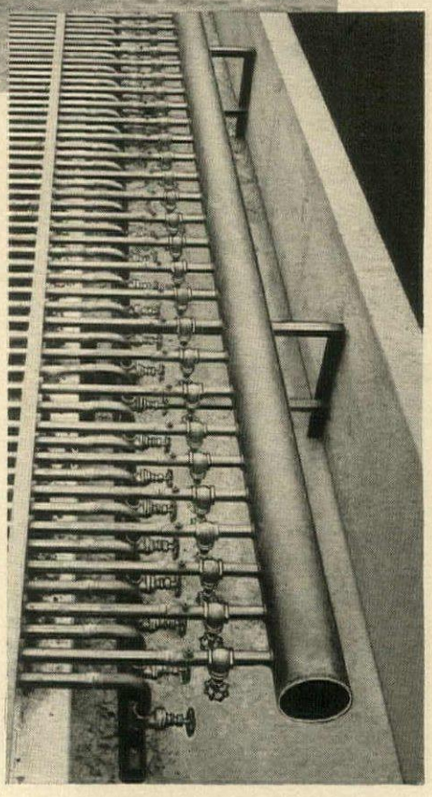
Rink builders rely on JENKINS VALVES

Modern skating rinks at sports arenas, colleges, schools, and clubs provide a hard, flawless surface on demand. Making better ice than nature requires critical valve control of hundreds of separate loops under the ice.

Arrested flow of the brine in even one loop could cause a dangerous "soft" channel across the surface. At any one of hundreds of critical points, faulty valve operation could easily shut down an entire rink.

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Despite this extra value, *you pay no more* for Jenkins Valves. Let the Jenkins Diamond be your guide to valve dependability, for all new installations, for all replacements. Jenkins Bros., 100 Park Ave., New York 17.



The JENKINS VALVES controlling each loop from the brine header in the St. Paul's School rink at Concord, N. H., are Fig. 1273 Bronze Gates with socket ends for silver brazing. These and other Jenkins Valves on lines to compressors, condensers, and pumps assure the critical control essential to efficient rink operation.

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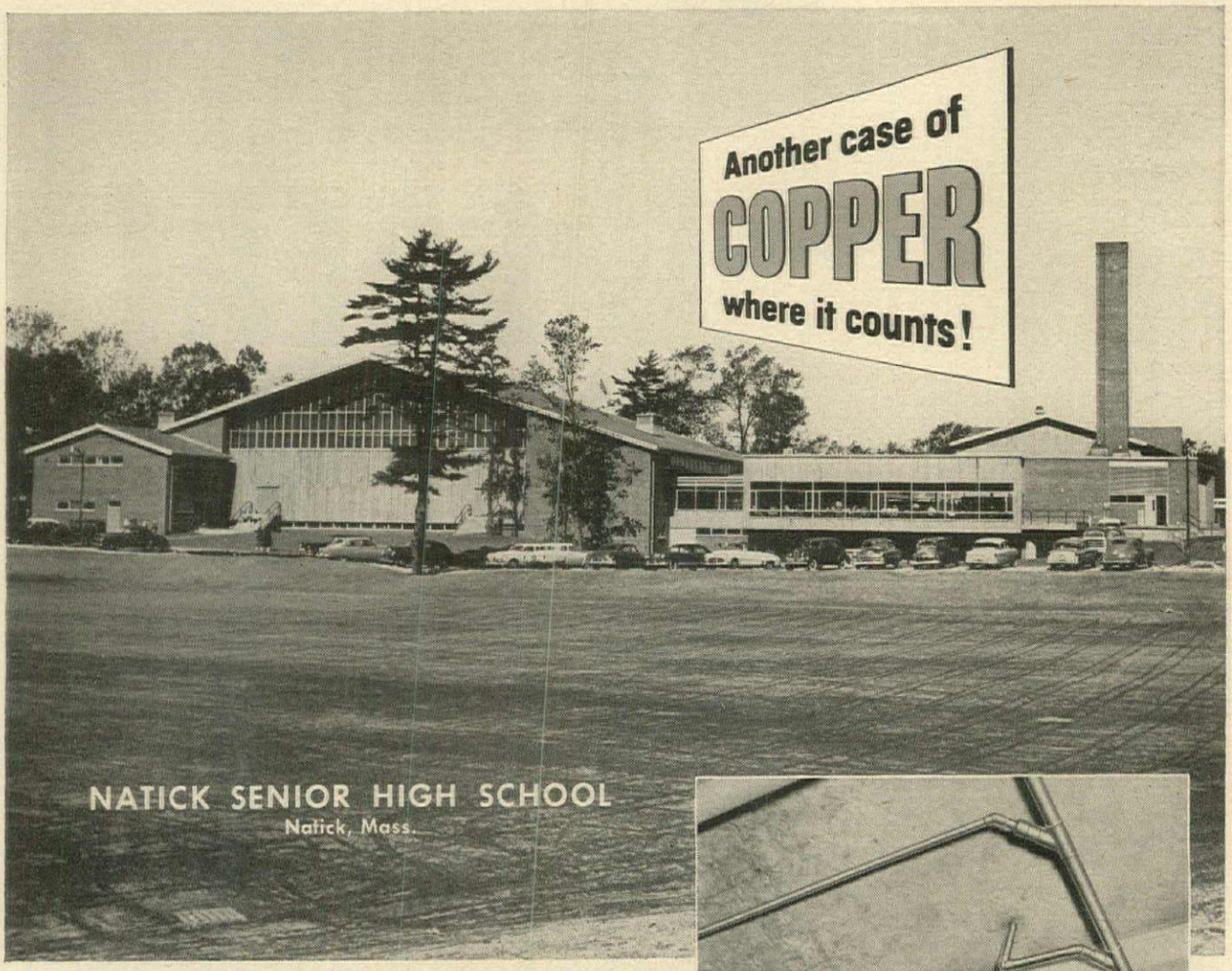
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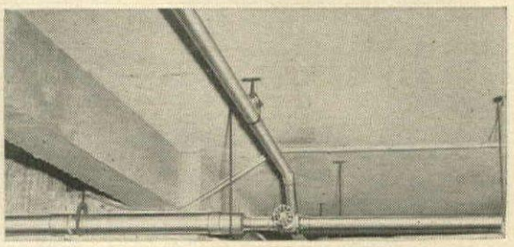
Architects: SHEPLEY, BULFINCH, RICHARDSON & ABBOTT and SMITH & SELLEW, Boston
Gen. Cont.: B. PERINI & SONS, Framingham, Mass.
Plumb. Cont.: C. H. CRONIN, Boston
Revere Dist.: CHARLES D. SHEEHY, INC., Boston

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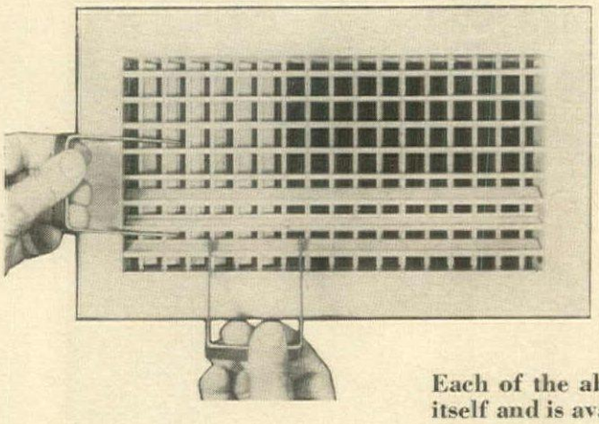
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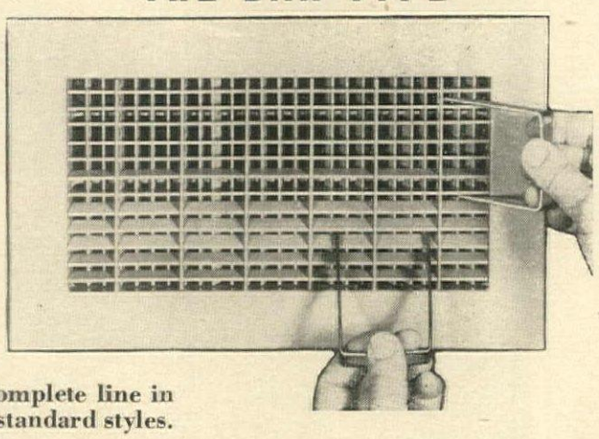
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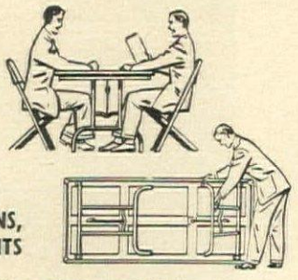
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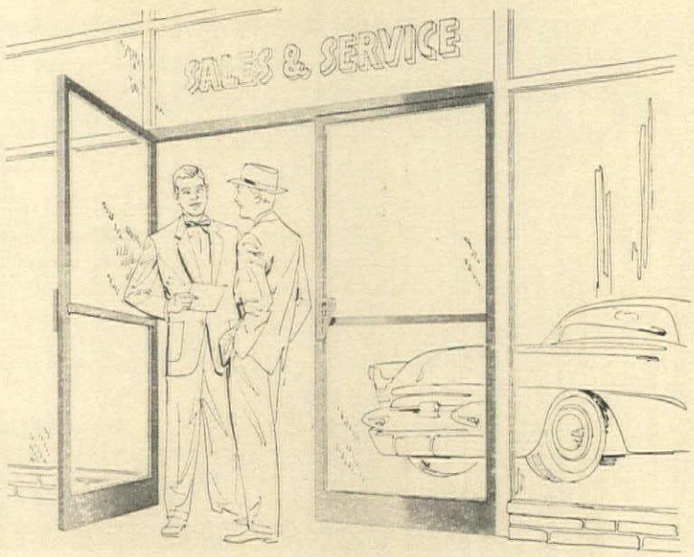
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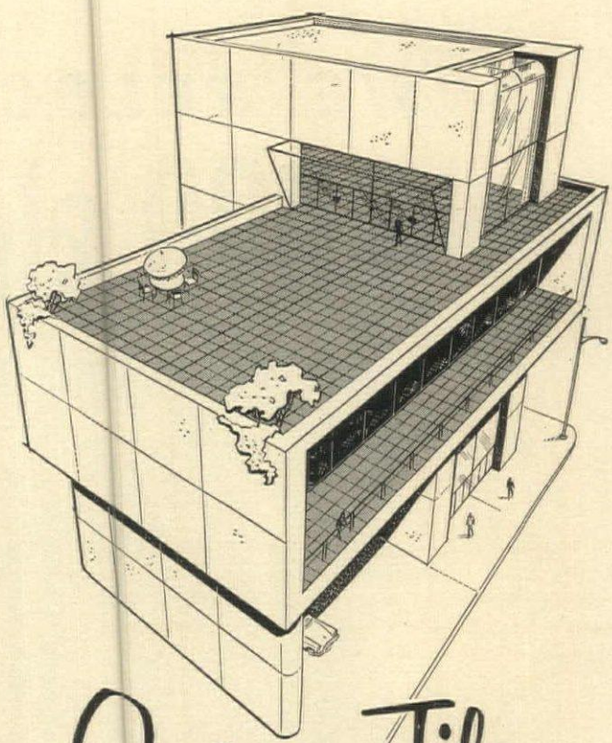
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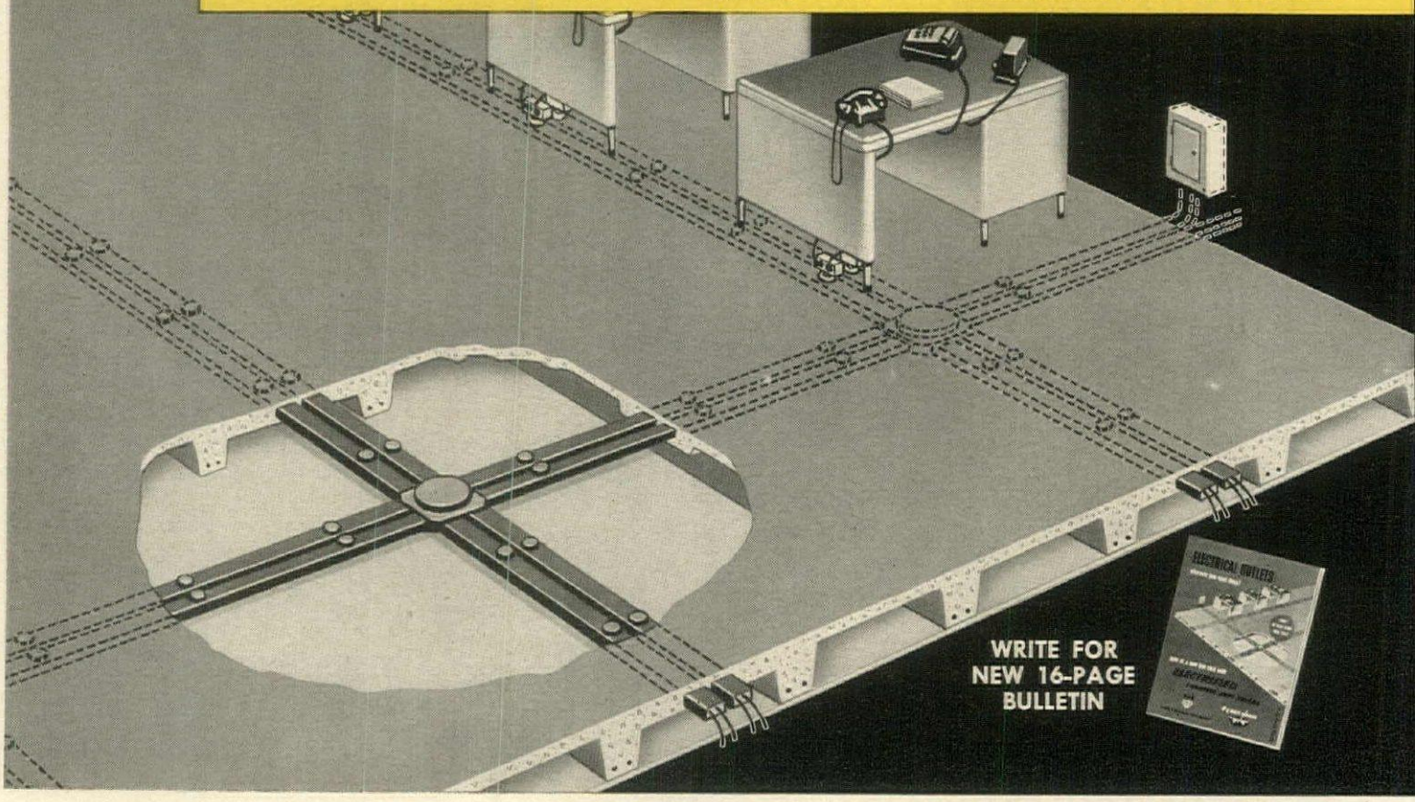
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Connecting some of the 1500 telephone outlets installed in the R/C Duct Floors.



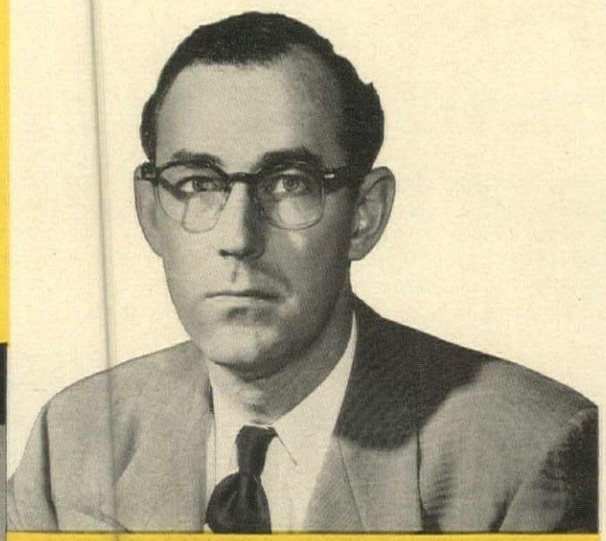
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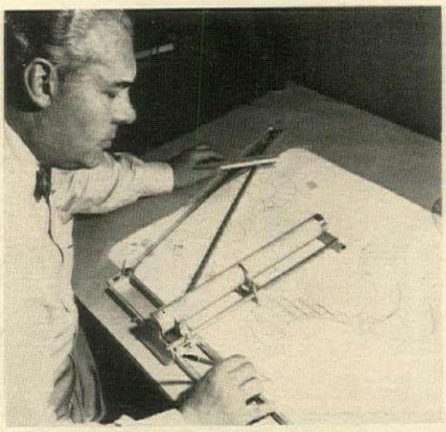
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Manufacturer: Perspectograph Corp., 285 Madison Ave., New York 17, N.Y.

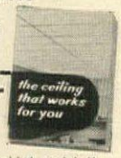


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continued on p. 288

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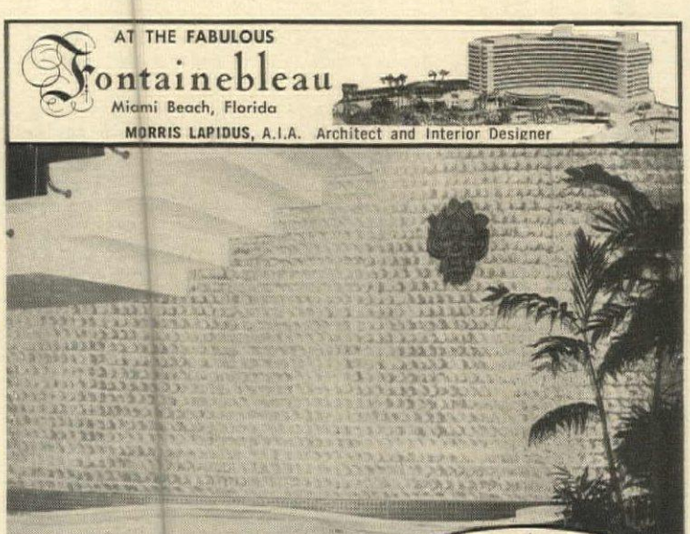
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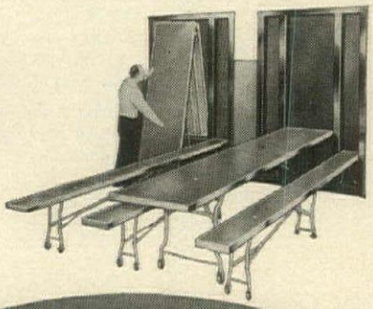
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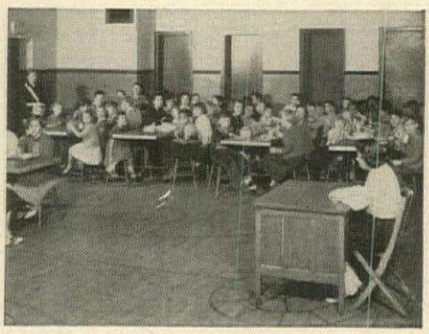
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IS OVER 16 TIMES MORE EFFECTIVE

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Don't risk your reputation by using an inferior "so-called" vapor barrier. When specifying a vapor seal material be sure it meets these Sealtight standards of quality: permeance rating of only .0066 grains per square foot . . . resistant to rot, mold and termites . . . strong enough to resist tearing and puncturing . . . expandable . . . quickly and easily installed—Premoulded Membrane has them all.
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Remember the time to "eliminate" destructive moisture and vapor is in the original construction, with the use of Sealtight Premoulded Membrane and Corktite perimeter insulation . . . all other methods are merely temporary "stop-gaps". *WRITE TODAY FOR COMPLETE INFORMATION.*

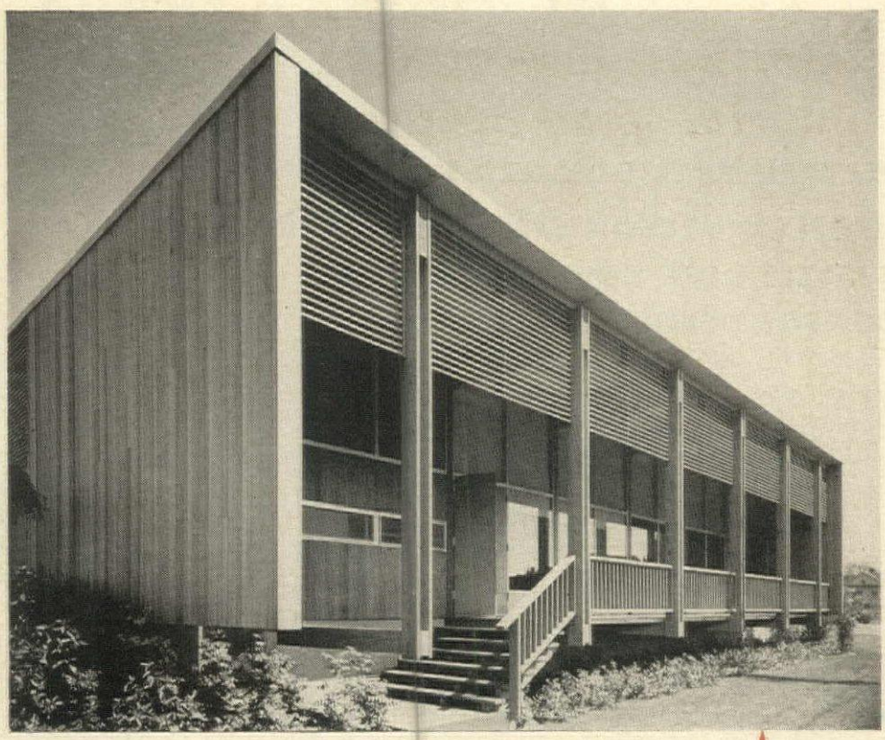


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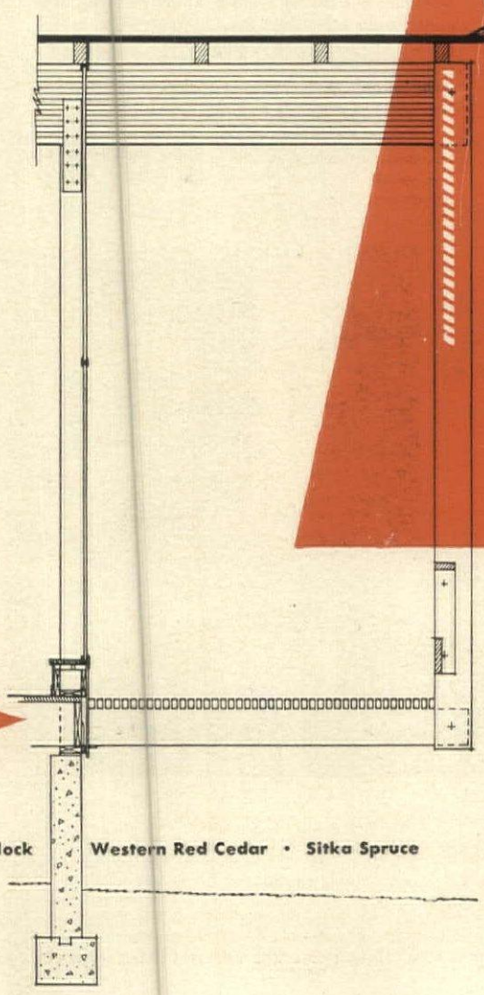


Tucker-Maxon Oral School designed by the office of Belluschi and Skidmore, Owings & Merrill. Another outstanding example of the use of wood in modern architectural designs produced by this firm.

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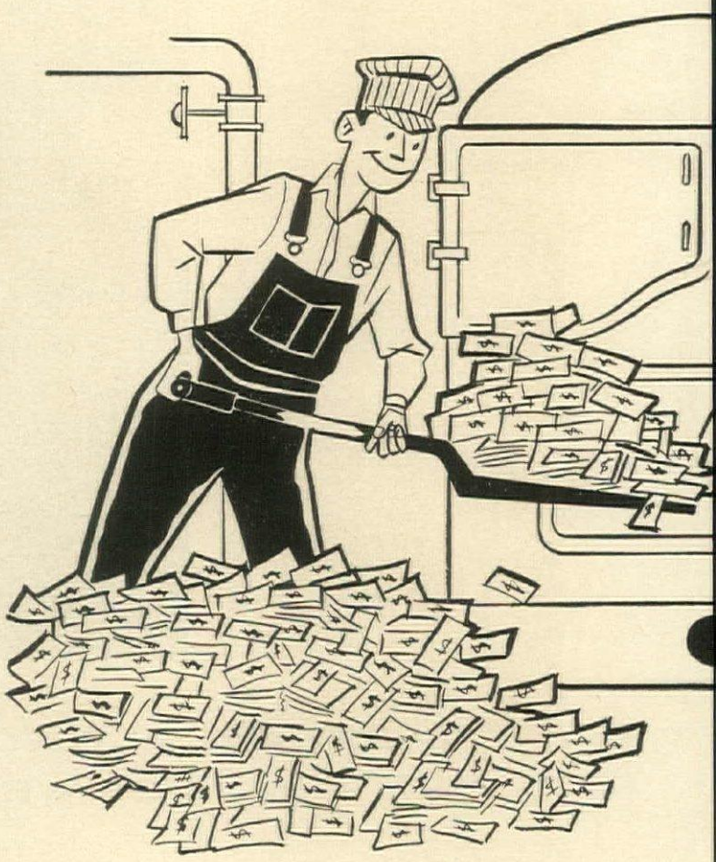
Do your schools have money

WASTED FUEL DOLLARS SAVED BY HERMAN NELSON DRAFT|STOP SYSTEM GIVE YOU CLASSROOM COMFORT "FOR FREE".

IF you're depending on open windows for classroom cooling and ventilation, you do *have money to burn!* It's the fuel dollars spent for unneeded heat—heat that is literally "tossed out the window" in an effort to bring classroom temperatures down to comfort level.

Herman Nelson DRAFT|STOP lets you keep both windows and heating costs down through balanced two-way temperature control. It heats only when heat is needed. When your "free heat" sources—sun, lights and students—take over, this system assumes the function of cooling, introducing outdoor air in sufficient quantities to maintain classroom temperature at comfort level. And, to make this fuel saving complete, the Herman Nelson method of draft elimination functions without using costly heat.

Comfort and cash savings—let Herman Nelson prove how easy it is to have both. For complete information, see our catalog in Sweet's Architectural File, or write Herman Nelson Unit Ventilator Products, American Air Filter Co., Inc., Louisville 8, Ky.





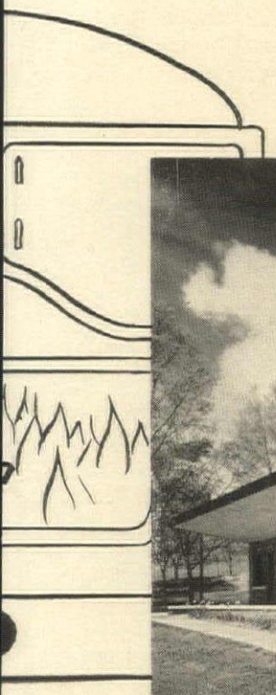
NEW YORK. With today's critical classroom shortage, this room represents a perfect example of low cost modernization. Even with windows closed and curtains drawn, a Herman Nelson DRAFT|STOP Unit Ventilator keeps this Audio-Visual demonstration classroom at New York University properly cooled and ventilated. Installation includes new Light|Stop Curtain Accessory (see inset) which prevents curtain from billowing due to discharge air from unit ventilator, thereby eliminating distracting light streaks. Co-chairmen National Committee on Buildings and Equipment, Department of Audio-Visual Instruction of the N.E.A.: Dr. A. J. Foy Cross and Dr. Irene Cypher; Architects: Eggers and Higgins.

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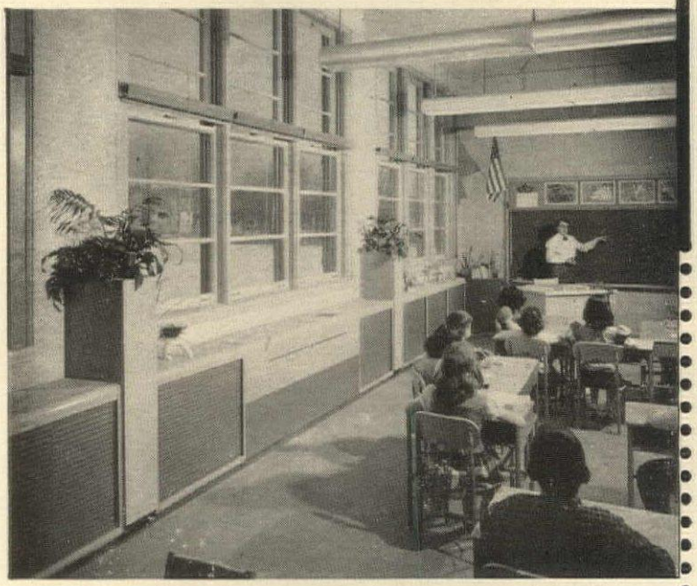
to burn?





SOUTH DAKOTA. Large glass areas help insure bright, cheerful classrooms—but cooling, heating and ventilating functions at Lincoln Grade School, Yankton, S. D., are assigned to dependable, efficient Herman Nelson DRAFT|STOP Unit Ventilators. Superintendent of Schools: L. H. Baumann; Architects: Hugill, Blatherwick & Fritzel; Engineers: G. M. Orr Engineering Co.; Mechanical Contractor: Freeman Corporation.

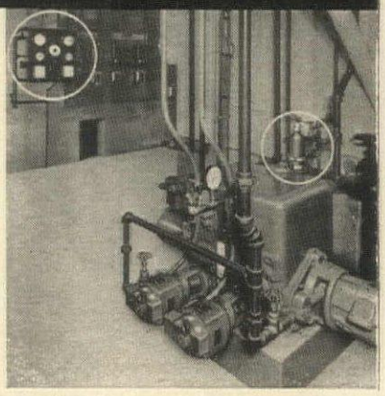
ILLINOIS. Helps them to concentrate in comfort. No chilling drafts — no interruptions from opening and closing windows. Herman Nelson Unit Ventilators meet classroom cooling, heating and ventilating requirements every season of the year at Solomon School, Chicago, Ill. Superintendent of Schools: Benjamin Willis; Architect: John C. Christensen; Engineer: Joseph T. Fatz, Sr.; Mechanical Contractor: Dearborn Plumbing & Heating Service, Inc.



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TUNES IN WITH THE WEATHER!

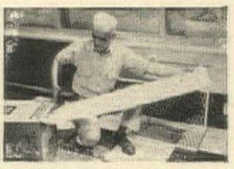
Illinois Selectotherm — an automatically controlled high vacuum steam heating system which through single dial control, balances heat supply against heat loss in many school spaces. Ask for Bulletin 540.

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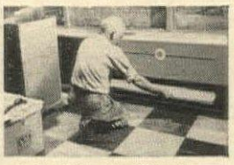
1. Remove the aluminum filter frame from the unit ventilator and dispose of soiled media.



2. Pull out desired length of clean AMER-glas media from self-dispensing carton and cut with scissors.



3. Insert the clean filter media in the frame and lower hinged top into position.



4. Replace the filter frame in the unit ventilator. It's ready to go!

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Continued from p. 282

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continued on p. 294

HOW PRONE TO DOUBT,
HOW CAUTIOUS ARE THE WISE.
—Homer

IF YOU ARE SATISFIED

YOU'VE PICKED THE RIGHT HEATING SYSTEM,

then you must have checked all of them!

We respect your judgment as an architect or engineer, in your specification of heating method. That's your job. Building owners depend on you to discriminate. They look to you to select the heating equipment that will give them the best heating result, with the greatest safety, and at the lowest practical cost per BTU.

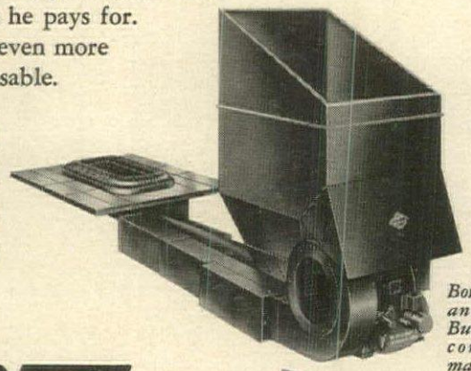
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. . . consider firing it with a Will-Burt Automatic Air-Controlled Stoker. Air-Controlled, you know, means that the fuel bed *always* gets just the amount of air needed for efficient combustion. Putting it another way, it means that your client gets all the BTU's he pays for. Results like that make clients even more certain your advice is indispensable.

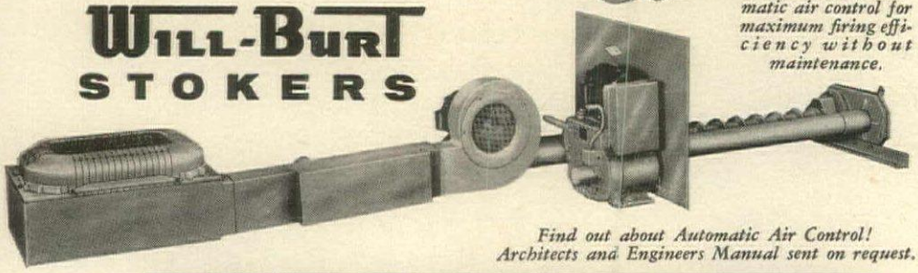
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☐ Give me names of the nearest suppliers of Armco Stainless Steel roof drainage items

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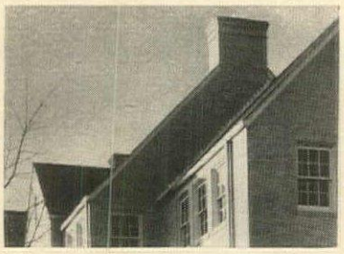
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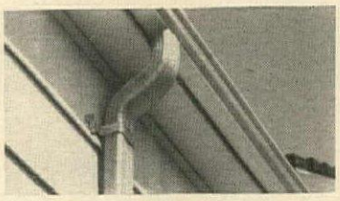
blends with surroundings

The soft, subdued finish of Armco Stainless Steel for roof drainage harmonizes well with any other building material or color scheme.



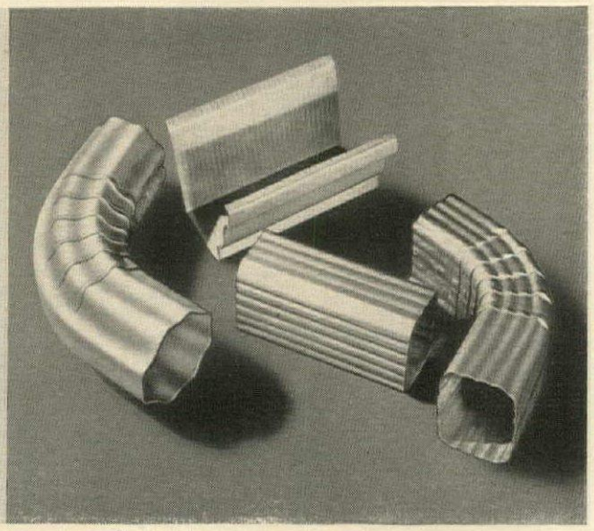
no patina to stain

There is neither rust nor patina to wash off on painted woodwork or masonry in completely stainless steel roof drainage systems. This means fewer repainting and cleaning jobs, much lower upkeep costs.



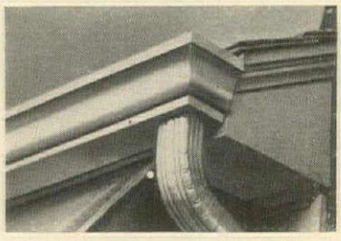
COMPLETE ROOF DRAINAGE SYSTEMS NOW AVAILABLE IN ARMCO STAINLESS STEEL

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When you specify Armco 17-7 Stainless Steel for roof drainage you get the strongest metal used for this purpose. Gutters withstand heavy loads of ice and snow without sagging—resist buckling and cracking due to extreme temperature changes.



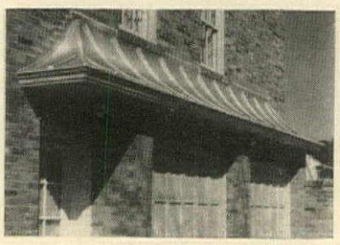
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Any good sheet metal man can install standard Armco Stainless Steel valley, guttering and conductor pipe. Flat strip is readily available for fabrication into special designs. Parts solder readily, producing strong clean joints.



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In a stainless steel roof drainage system, flashing should be made of stainless steel strip, and to prevent stains from corrosion of other metal, all accessories should be of stainless steel too. These include hangers, hooks, nails, rivets, screws, cleats and bolts.



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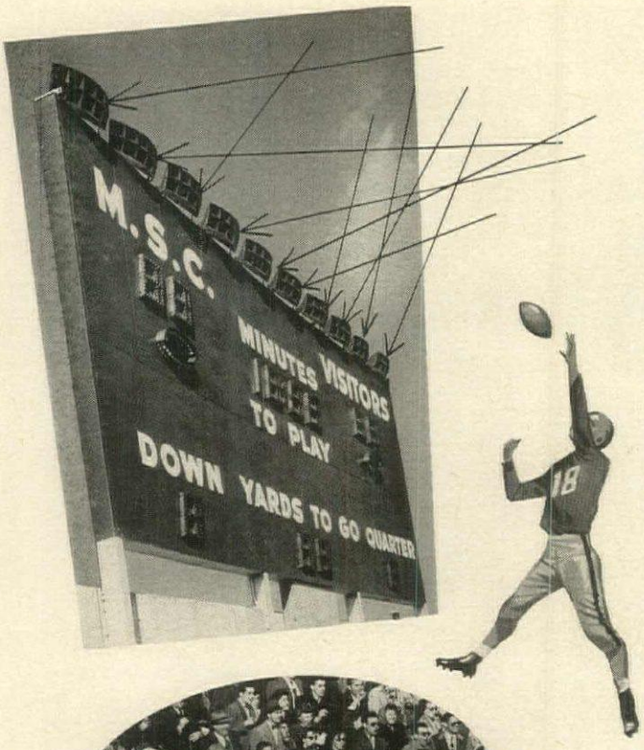
The new Martin Van Buren High School, in the heart of New York's fastest growing borough, will open for classes this fall. Its over 3000 students will find it the most modern, best equipped and one of the largest high schools in the biggest school system in the country. It is constructed of the newest and best materials to insure many trouble-free years of low maintenance use.

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See our catalog in the Architectural File (32a/AL) and in the Industrial Construction File (12j/AL) —or write Dept. 10F.

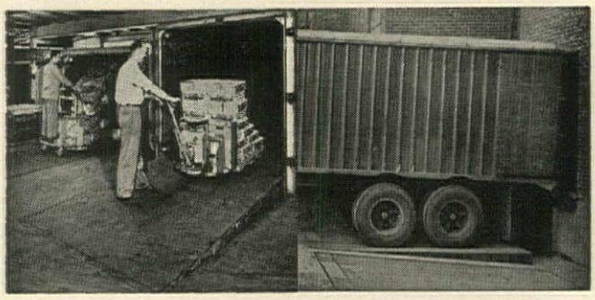
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Yes, we at MACK MOLDING have been *"collaborating"* with people such as yourself since 1920 and believe we are qualified to render a service to you.

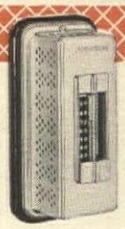
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Insures Correct Temperatures, Cuts Fuel Costs

This modern addition to Saint Luke's Hospital in Denver is an excellent example of the way skilled planners can increase facilities for comfort and convenience and, at the same time, minimize operating costs. The building adds 180 beds to the total hospital capacity and also houses the pharmacy, all administrative offices and the public lounge.

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Addition to Saint Luke's Hospital, Denver. R. L. Linder & Associates, architects; L. A. Michael, mechanical engineer; Midwest Plumbing & Heating Co., heating contractor; all of Denver.

Next time you have a temperature or humidity control problem, talk it over with an engineer from a nearby Johnson branch. He draws on the more than 70 years' experience of the only nationwide organization devoted exclusively to planning, manufacturing and installing automatic temperature control systems. His help is yours for the asking. Johnson Service Company, Milwaukee 1, Wisconsin. Direct Branch Offices in Principal Cities.

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Clears the entire opening — jamb to jamb, floor to lintel.

Opened door stays out of reach of wind or vehicles.

All surrounding floor and wall space is always fully usable.

Rugged all-steel curtain repels wind, fire, theft, vandalism.

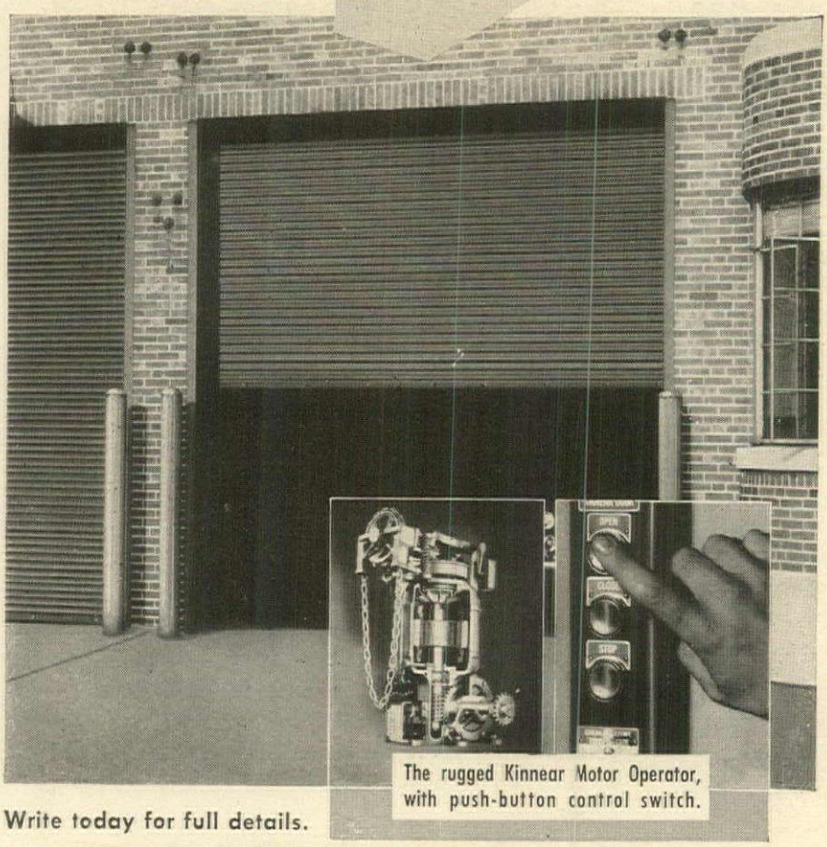
Heavily galvanized curtain gives lasting resistance to elements.

(1.25 ounces of pure zinc per square foot of metal, as per ASTM standards.) Kinnear Paint Bond — a hot phosphate immersion assures thorough, lasting paint grip.

Smooth, easy coiling upward action saves time and labor.

Ideal for motor operation; remote control switches if desired.

Any size; quickly, easily installed in old or new building.



The rugged Kinnear Motor Operator, with push-button control switch.

Write today for full details.

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Saving Ways in Doorways
KINNEAR
ROLLING DOORS

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PRODUCTS

Continued from p. 288

MASONRY

Atlas Compo Forms for Concrete Construction. Irvington Form & Tank Corp., 20 Vesey St., New York, N.Y. 4 pp.

Build Better Masonry with Atlas Mortar Cement. Universal Atlas Cement Co., 100 Park Ave., New York 17, N.Y. 24 pp.

Reference Manual. Ohio Lime Co., P. O. Box 128, Woodville, Ohio. 28 pp.

Thin Wall Sections of Zonolite Vermiculite Concrete for Spandrel, Panel and Curtain Walls. No. CA-18. Zonolite Co., 135 S. LaSalle St., Chicago 3, Ill. 4 pp.

Waterproofing, Maintenance and Restoration of Masonry Buildings. Brisk Waterproofing Co., Inc., 103 Park Ave., New York 17, N.Y. 8 pp.

MATERIALS HANDLING

Buschman Roller Conveyors. Catalogue 60A. The E. W. Buschman Co., Clifton and Spring Grove Aves., Cincinnati 32, Ohio. 20 pp.

PARKING

Motor Banking. Diebold, Inc., Canton 2, Ohio. 154 pp.

Parking in the Air with Structural Steel. American Institute of Steel Construction, 101 Park Ave., New York 17. 24 pp.

PARTITIONS

Movable Metal Walls for School Buildings. Two bulletins. The Mills Co., 980 Wayside Rd., Cleveland 10, Ohio. 4 pp. each

STEEL FRAMING

Lightsteel Structural Sections. Technical Manual. Penn Metal Co., Inc., 205 E. 42d St., New York 17, N.Y. 16 pp.

TIMBER

Wolmanized Pressure-treated Lumber. Wolman Preservative Dept., Koppers Co., Inc., 1301 Koppers Bldg., Pittsburgh 19, Pa. 16 pp.

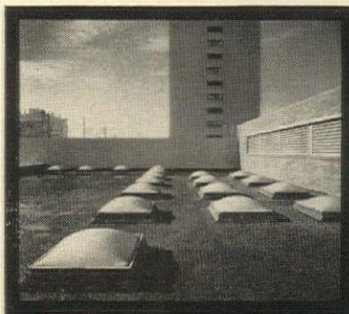
Wood Handbook. Revised. Superintendent of Documents, Government Printing Office, Washington 25, D.C. 528 pp. $2

WINDOWS AND DOORS

Dome Skylights and Ceiling Domes. Detail Data Manual. Plastic Products of Texas, 1400 Cedar Springs Ave., Dallas, Tex. 44 pp.

Interior Steel Doors. Steel Door Institute, 2130 Keith Bldg., Cleveland 15, Ohio.

Vinyl Plastics for Metal Window Industry. Irvington Div. of Minnesota Mining and Mfg. Co., 6 Argyle Terrace, Irvington 11, N.J. 20 pp.











more than 9000 schools daylighted with

WASCOLITE SKYDOMES®



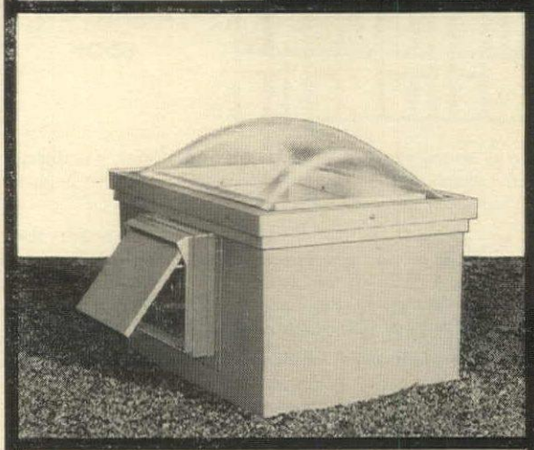




Wascolite Skydomes — the first prefabricated plastic skylights — have helped change the design of the American classroom. Handsome, trouble-free and inexpensive, they bring even, balanced daylight to every desk, and to every part of the building — in more than 9000 schools across the nation!

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Patent No. 2610593, 2693156 and pats. pending



WASCOLITE VENTDOME—Daylighting plus ventilation! Wascolite Ventdome provides positive ventilation by a motor-driven, built-in air exhaust. Also available: Wascolite Airdome, manually opened and closed to provide natural ventilation.

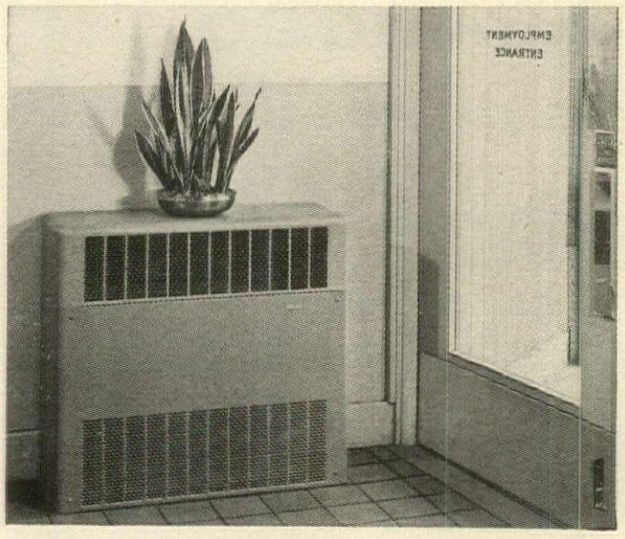
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Wasco Chemical (Canada), Ltd., 3229 Yonge St., Toronto, Ontario

Carrier knows heating

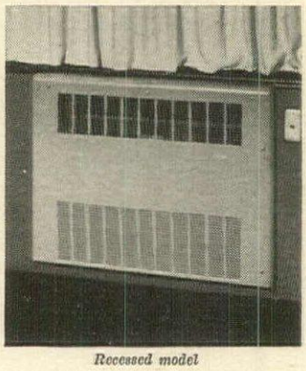
Over fifty years of leadership in air conditioning have given Carrier unmatched experience in the control of temperature—heating as well as cooling. Yes, Carrier knows heating by experience . . . and all this engineering skill and leadership contributes to the superiority of Carrier Unit Heaters.



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Cold reception rooms, lobbies, vestibules, entrances are poor invitations to patrons of banks, hotels, stores, restaurants or similar commercial establishments. Owners will never know how much business they lose as a result. But the cost of a Carrier Cabinet Unit Heater is so little in comparison that the installation becomes a matter of good business.

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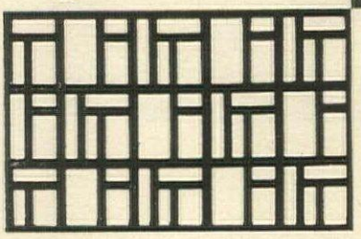
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They provide more-than-ample open area for the free passage of air, and are available in a wide variety of designs to best set off your decor. And they're easy to install—always lie flat because of a special flattening operation in their manufacture.

Over one hundred basic designs are available to choose from—many are obtainable only from Hendrick. Hendrick will gladly cooperate with architects to help select from a wide range of standard and special designs. For more complete details write Hendrick today!

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Perforated Metal • Perforated Metal Screens • Wedge-Slot Screens • Architectural Grilles • Mitco Open Steel Flooring • Shur-Site Treads • Armorgrids

make hallways say, "Come in!"

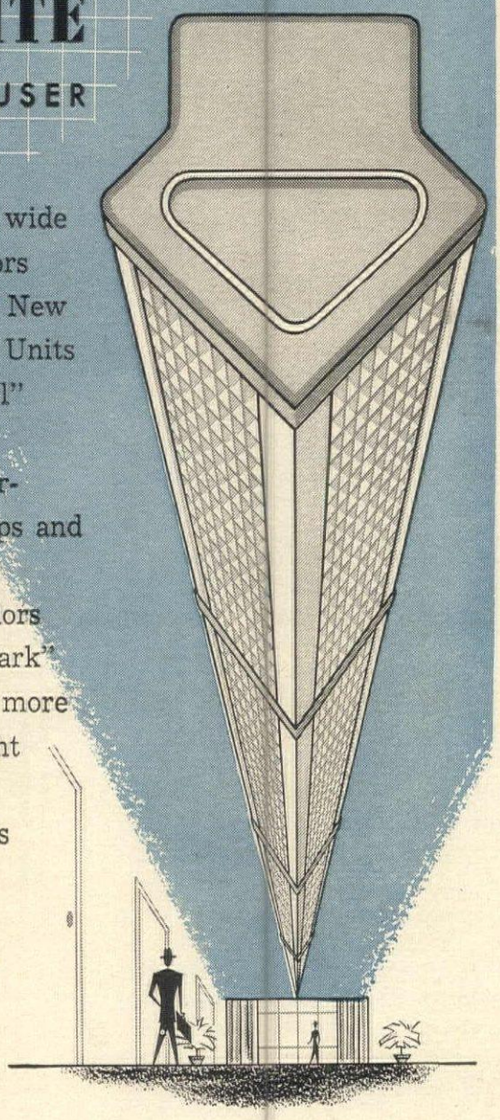
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GRATELITE*

LOUVER-DIFFUSER



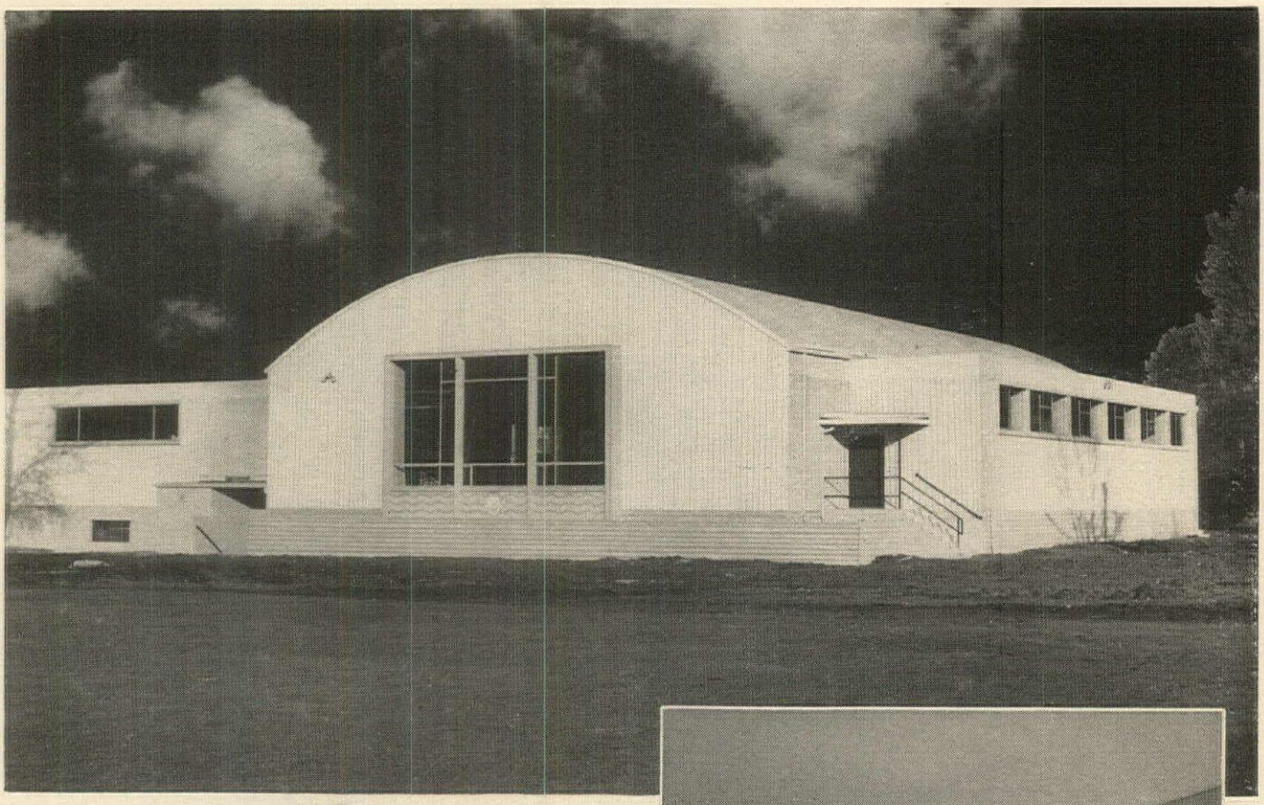
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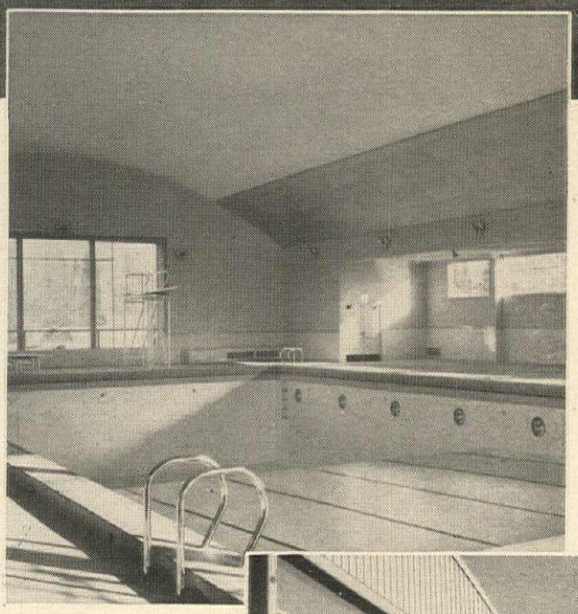
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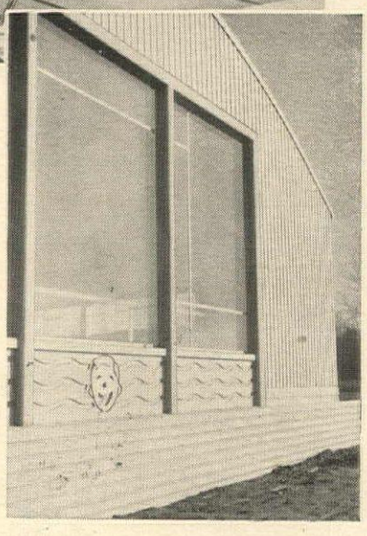
Shell Roof Provides Distinctive, Economical Pool in Seattle

Economical construction and unobstructed inside space were main reasons for choosing a concrete shell roof for the Seattle park department's swimming pool at Green Lake. The 64′ x 110′ roof is supported only at the end walls. It forms a curve with a 54′ radius and arches to 25′ above the normal pool water level. The concrete in the roof tapers from 6″ thick at the end walls to 3¼″ in a distance of 4′.

Concrete shell roofs can span up to 300′ and more without supporting columns. That's an important consideration in auditoriums, garages, warehouses, hangars, gymnasiums, exhibition buildings and train sheds and repair shops.

Concrete shell roofs are low-annual-cost investments. They are economical to build, need little or no maintenance, have long life and low insurance rates. Write for free literature. It is distributed only in the United States and Canada.





Top: Attractive exterior of the Green Lake swimming pool building of the Seattle, Wash. park department.

Center: In the interior of the building the concrete shell roof made possible a large unobstructed area.

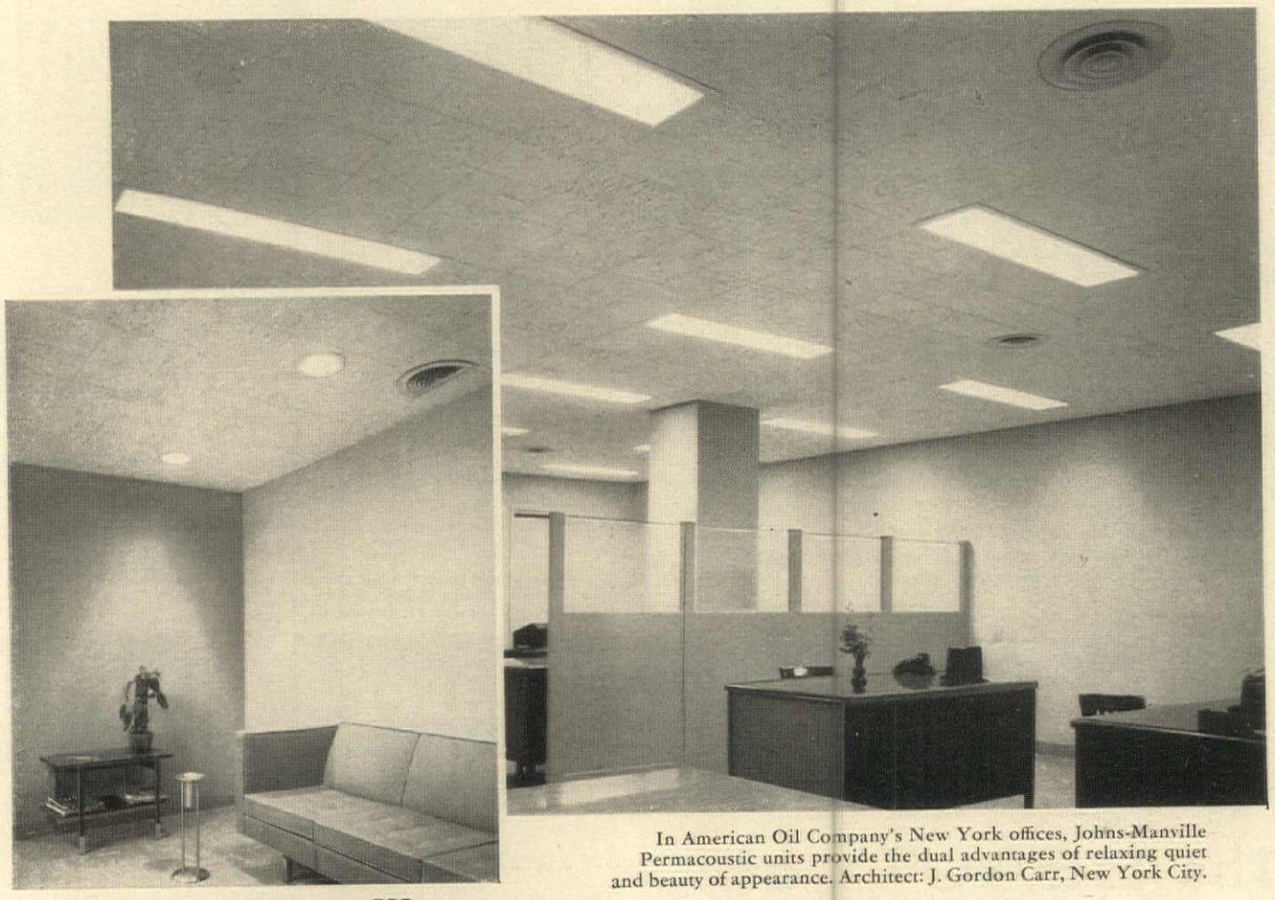
Right: Interesting decorative touches were cast in the exterior architectural concrete wall surfaces.

Architects and engineers: Lamont & Fey. General contractor: Cawdry & Vemo. Both firms are from Seattle.

PORTLAND CEMENT ASSOCIATION Dept. A-10-7, 33 West Grand Avenue, Chicago 10, Illinois

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Johns-Manville Permacoustic decorative acoustical units

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Permacoustic is available with either a textured or fissured surface. These random-textured finishes increase its high sound-absorbing qualities, and provide design and decorative interest.

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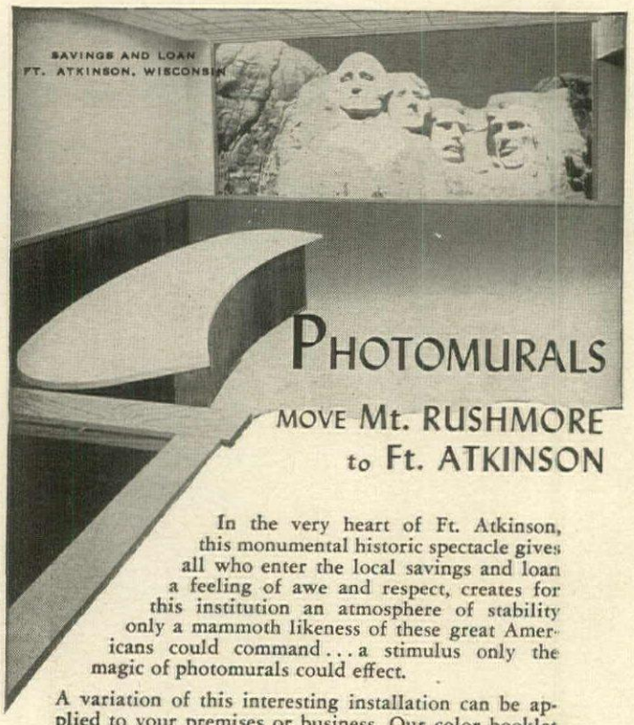
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	ACOUSTICAL EFFICIENCY Test No. A55-88	Test No. A55-87
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250	.35	.64
500	.83	.77
1000	.86	.92
2000	.82	.99
4000	.77	.89
noise reduction coefficient	.70	.85
weight per sq. ft.	1.3	1.3

*Also available in ⅞" thickness

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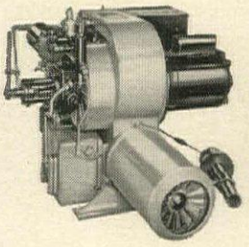
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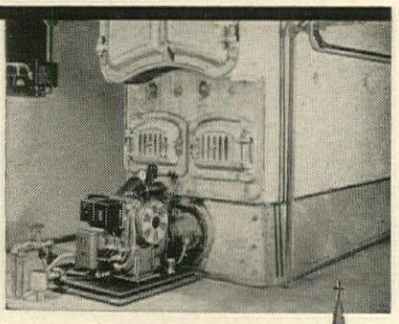
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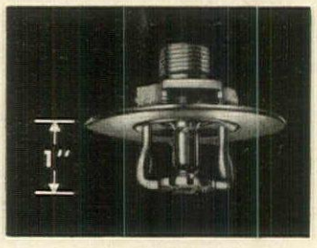
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By planning your fire protection in the blueprint stage, you not only get the most efficient protection, but a system that *harmonizes* with interiors.

Because the Grinnell Ceiling Sprinkler protrudes only 1 inch below the ceiling and is available in a variety of finishes and colors, it is the ideal sprinkler for offices, shops, stores, restaurants, lounges, country clubs. It gives reliable, unobtrusive fire protection.

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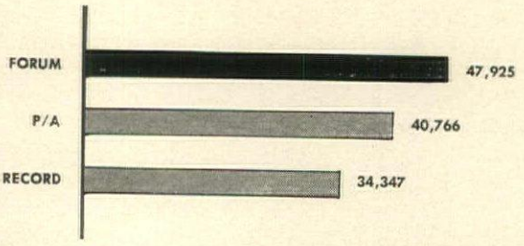
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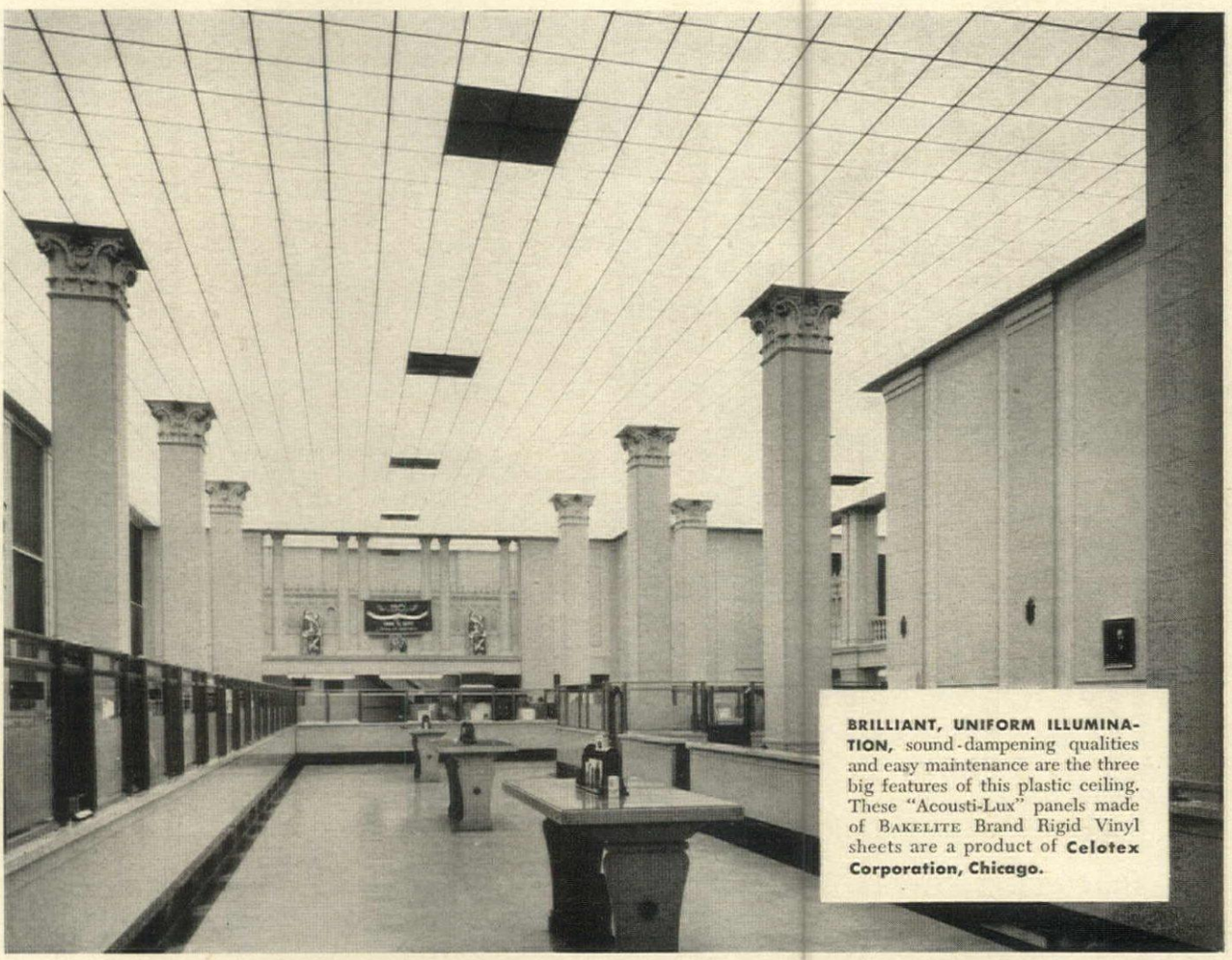
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the magazine of building

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BRILLIANT, UNIFORM ILLUMINATION, sound-dampening qualities and easy maintenance are the three big features of this plastic ceiling. These "Acousti-Lux" panels made of BAKELITE Brand Rigid Vinyl sheets are a product of **Celotex Corporation, Chicago.**

Bank credits new plastic ceiling with a 3-way dividend

It lights the room, cuts excess noise, makes maintenance easy

Gloom is out at the Bank of America, San Jose branch. Here, milk-white plastic ceiling panels—made of BAKELITE Brand Rigid Vinyl Sheets—shield continuous fluorescent strip units that give the office shadowless "daylight" illumination. A light-weight aluminum gridwork hung from the true ceiling supports the panels. They're easily installed, just as easily removed for fast access to sprinkler pipes and ceiling fixtures concealed above the panels.

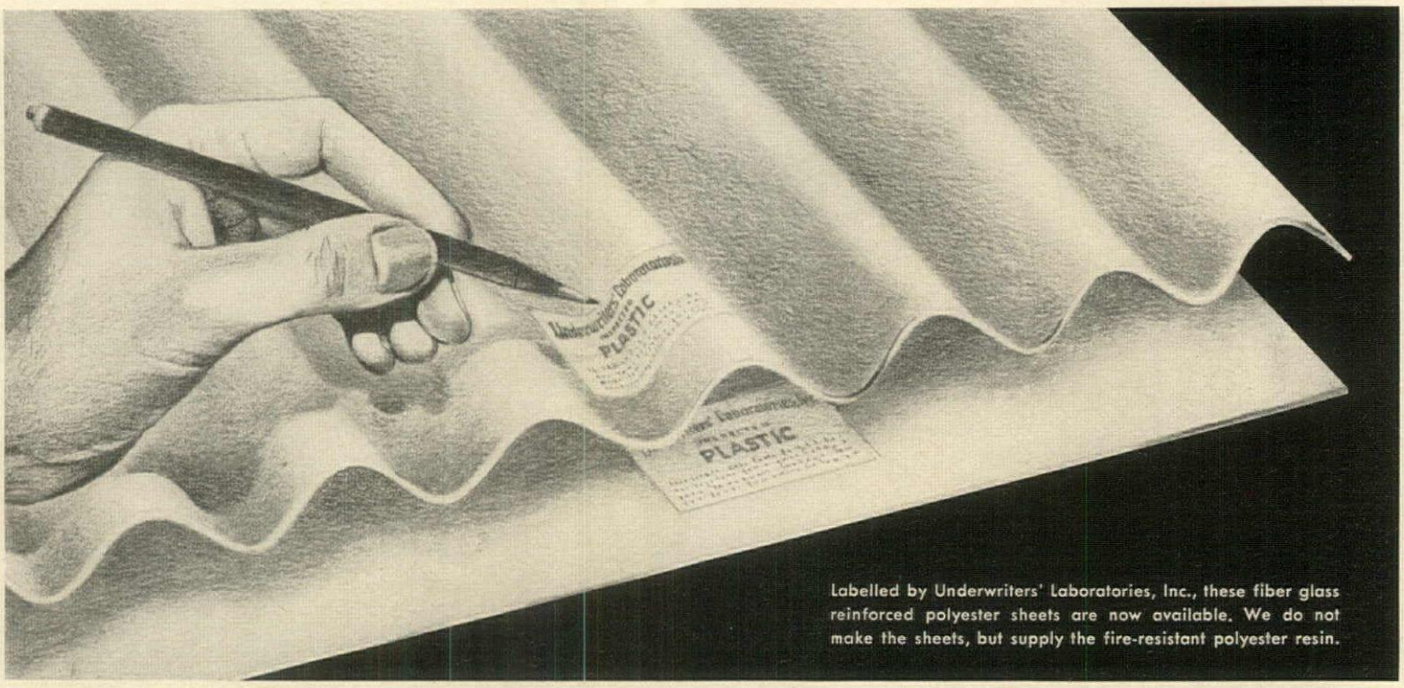
An interesting feature of this ceiling is its sound-dampening effect. Each panel is actually two deep-drawn plastic sheets placed back to back and sealed at the edges. The volume of air contained in the unit provides diaphramatic dampening of noise from the banking floor.

A ceiling like this will keep its beauty for years. BAKELITE Brand Rigid Vinyl Sheets won't warp, crack or discolor with aging. They resist moisture, oil, combustion and are dimensionally stable. They wipe clean with a damp cloth.

For modern illuminated ceilings—for screens, lampshades, vacuum formed signs—specify BAKELITE Brand Rigid Vinyl Sheets. You can get complete data by writing to Dept. LF-2.

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Labelled by Underwriters' Laboratories, Inc., these fiber glass reinforced polyester sheets are now available. We do not make the sheets, but supply the fire-resistant polyester resin.

FIRE-RESISTANT *polyester windows*

Get maximum window life, safety with these strong, non-shattering sheets made from glass reinforced HETRON® resin.

If commercial-industrial building codes have stopped you so far from specifying polyester-fibrous glass daylighting, you can in all likelihood meet code requirements with *this* sheet.

It gives you *fire-resistant* polyester windows, skylights, roofs, and partitions. It costs less to install than conventional windows, because it goes on in big sheets, without special framing or calking. It lets diffused daylight in, reducing the need for artificial lighting. It cuts window maintenance, because it *won't shatter*—and it will last for years.

Light stabilized HETRON resins now make it possible for you to obtain these panels with a high degree of weathering resistance.

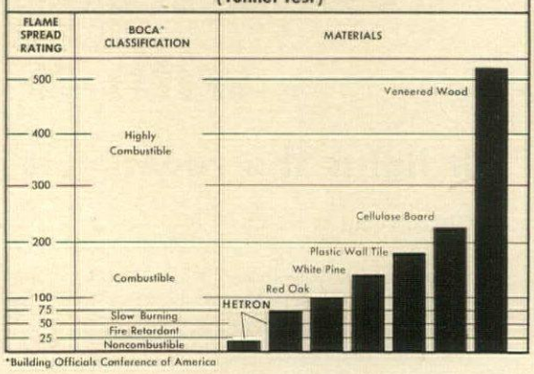
The sheet material pictured here is called "Fire-Snuf," manufactured by Resolite Corp., Zelienople, Pa. It comes to you with a *specific flame spread rating*. It is listed and labelled by Underwriters' Laboratories.

Sheet like this, made of HETRON resin, will burn only when a hot flame is directly applied to it. It "snuffs out" as soon as the flame source is removed.

It tests well within the range of "fire-retardant" and "slow burning" material classifications, as established by Building Officials Conference of America. These classifications form the basis for many building codes.

Other reputable fabricators also offer sheets made from HETRON resins. Write us for their names and addresses.

FLAME SPREAD OF HETRON compared with other materials. Measured in accordance with ASTM E84-50T (Tunnel Test)



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a new idea in low cost space division

UNISTRUT® Partitions

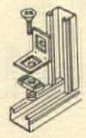
Here is a brand new idea in economical partitioning for factories, warehouses, offices and stores—a single panel partition that may be quickly erected with the simplest tools.

Ideal for permanent or movable walls that can be erected, dismantled and re-erected with minimum time and labor and with complete salvage of materials.

Neat and trim in appearance UNISTRUT steel frame partitions have sound-retarding qualities and possess great strength. They will take any standard panel material such as plywood, hardboard, plastics, cement asbestos, wallboard, metal, expanded metal or glass in any thickness up to ½ inch.

For a quick, simple, inexpensive partition—one that can be easily changed or moved, see your nearest UNISTRUT distributor.

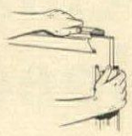
It's easy—fast—economical to erect UNISTRUT partitions



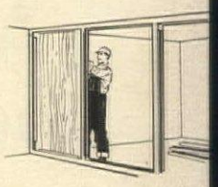
Here are the basic parts of a UNISTRUT Partition, UNISTRUT channel, spring nut, screw and fitting.



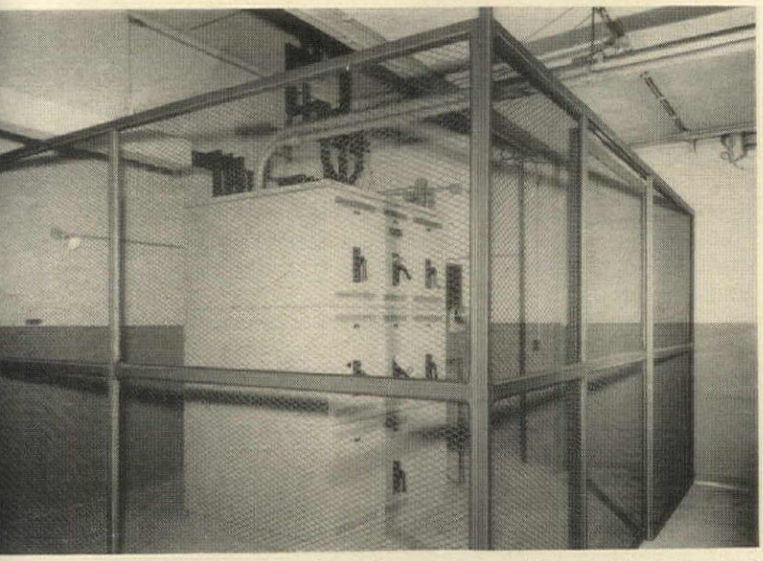
Just fasten channel to floor and wall.



Slip panel into molding strips.



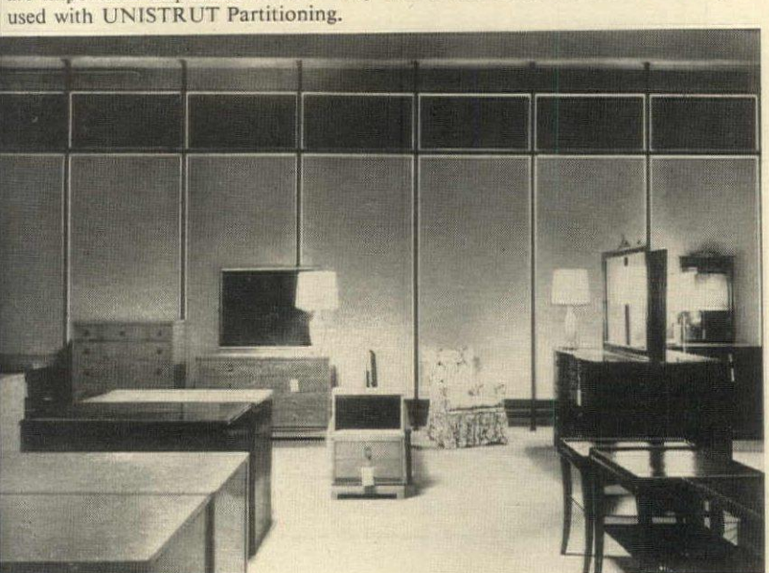
Place panel in frame and screw the corner plates in position.



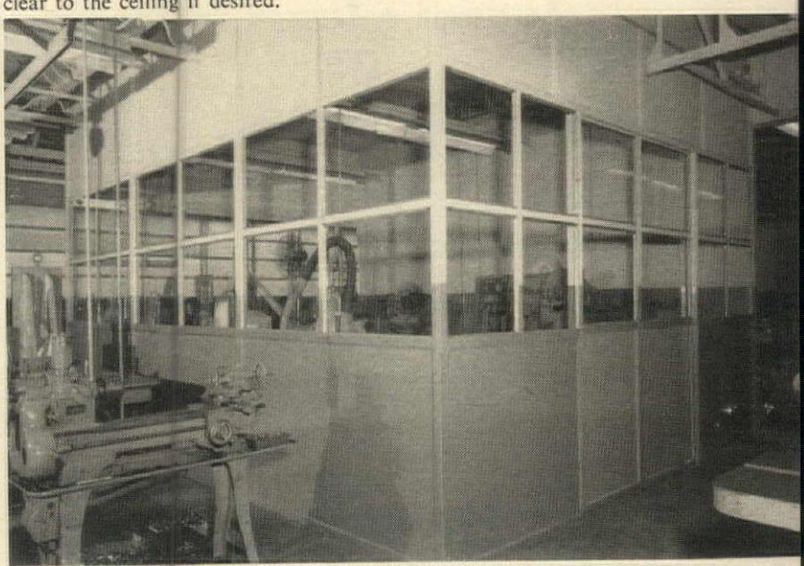
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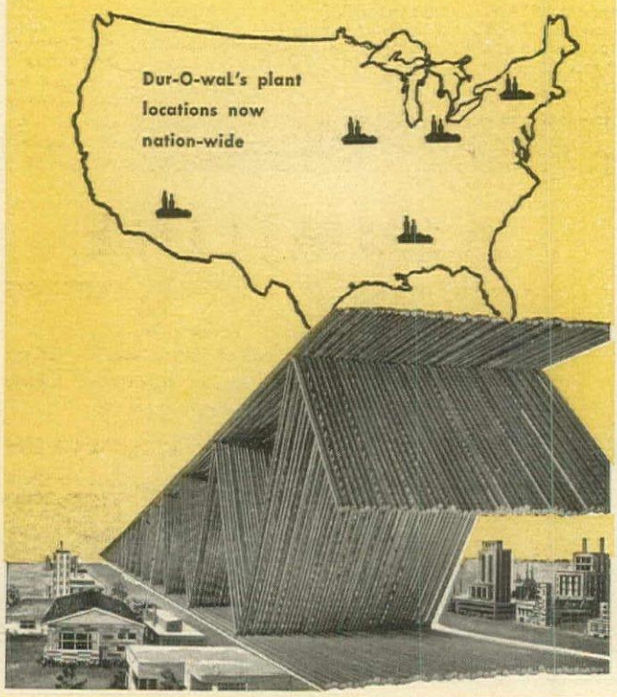
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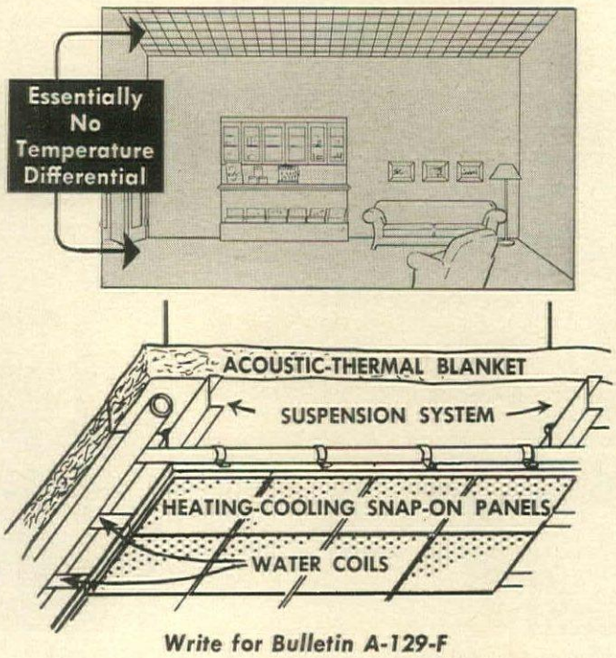
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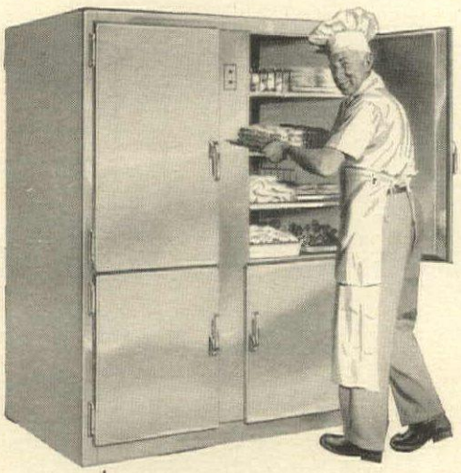
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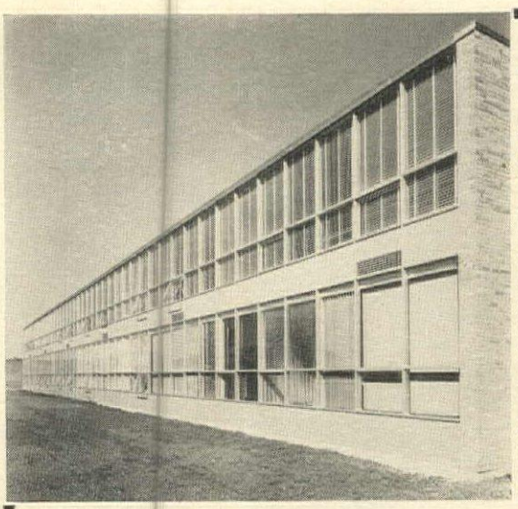
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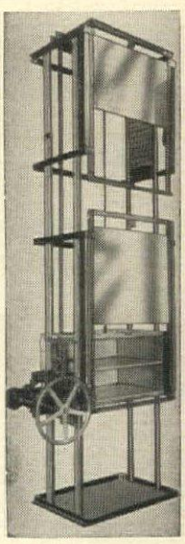
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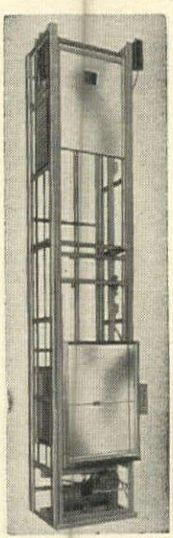
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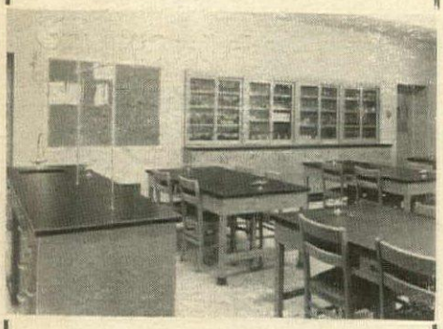
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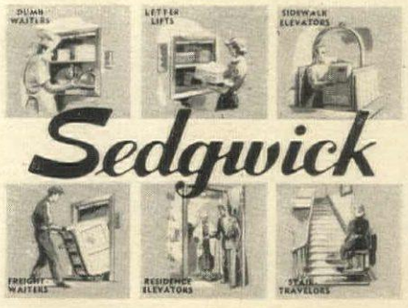
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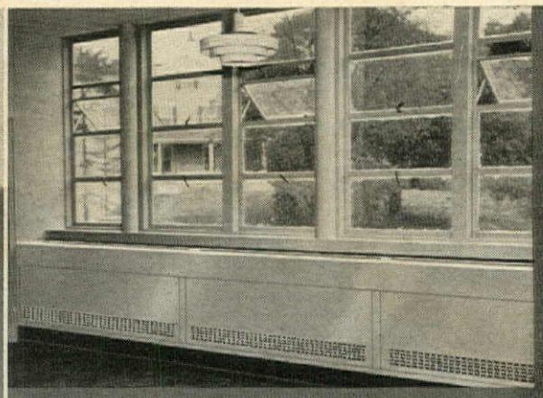
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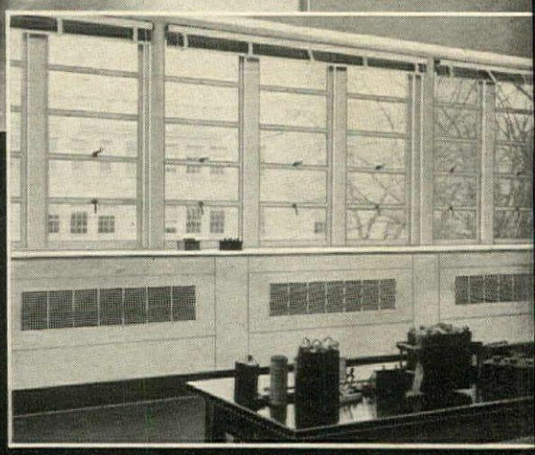
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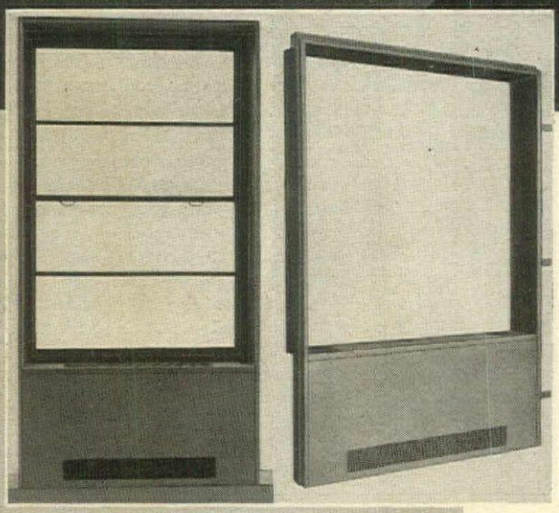
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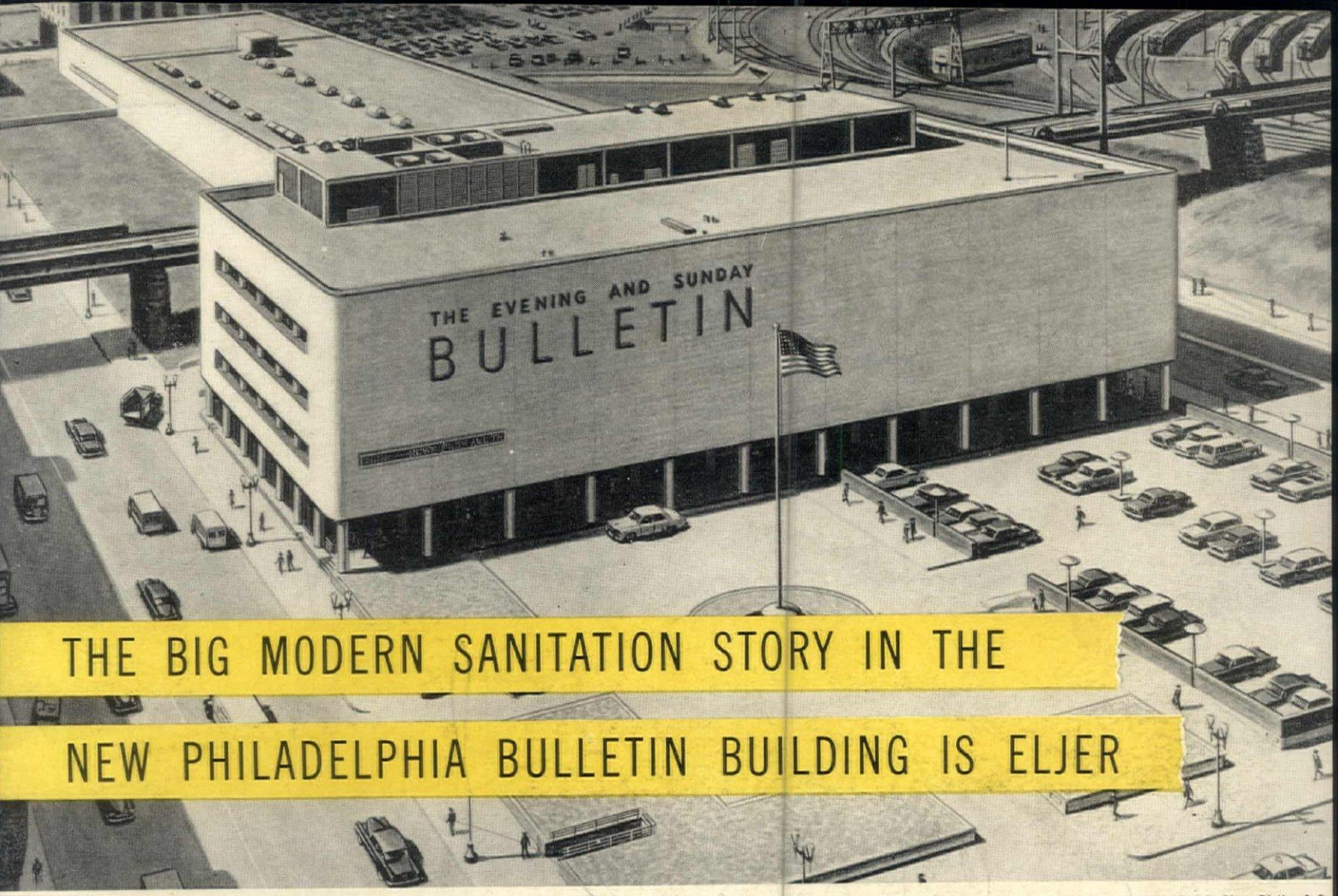
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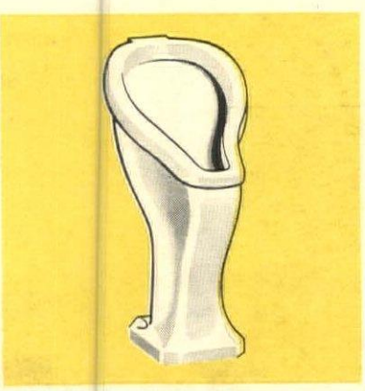
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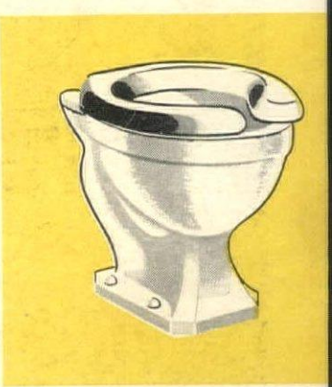
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